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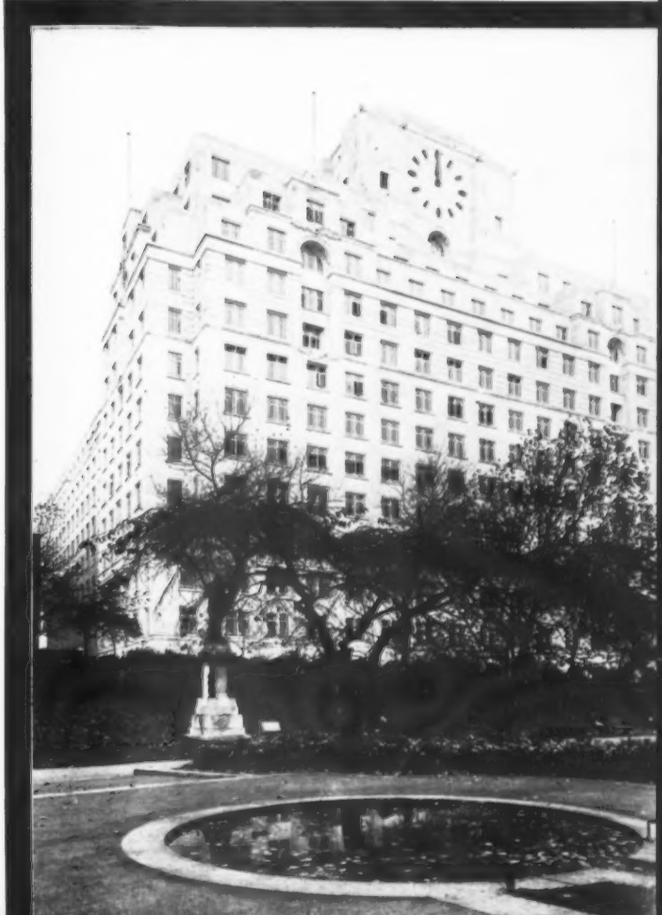

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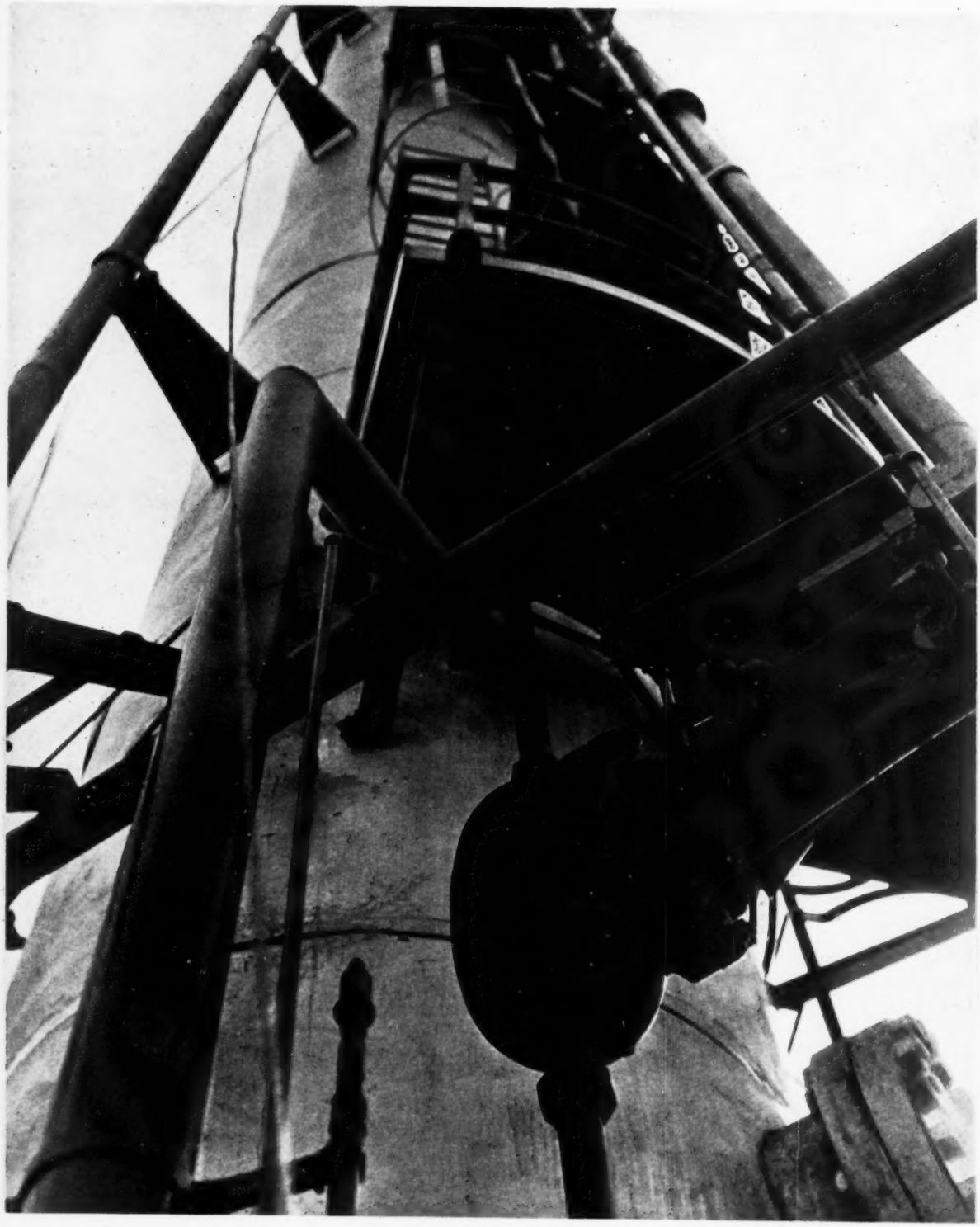

NEW YORK • WORLD • LONDON
PETROLEUM

"PRORATION is on trial" is the phrase echoed wherever the petroleum situation in the United States is under discussion.

Proration Not Alone on Trial

The assertion is true enough, but it is an understatement. Much more than proration is being put to the test as a result of conditions that have been allowed to come into existence in important producing and marketing areas.

The major oil companies are on trial, particularly those that have been satisfied to give lip service to the cause of conservation in the past and who, while keeping their own operations within the law, have not exerted an active influence toward the discouragement of contraband traffic. This is not to deny the sacrifice that the integrated companies unquestionably have made in support of proration. With ample production of their own and millions of barrels stored it would have been clearly to their advantage to draw on these supplies rather than to pay a profit to other producers while shutting in their own wells and bearing the heavy cost of storage.

The independent producers are on trial. The system of proration was designed for their protection even more than for that of large integrated organizations. Because it is possible to run above the allowable with slight risk of detection does not make the moral aspect of such action any better or the practical result less demoralizing if a large proportion of the producers indulge in it.

State proration officials are on trial. If testimony adduced in recent investigations is to be accepted some of them should answer charges not only at the bar of public opinion but also before a jury of their peers. Deliberate neglect to apply the law they are appointed to enforce, or discrimination in its enforcement, brings the entire system into contempt and is a blow not only at the oil industry but at the very foundation of representative government.

State legislatures are on trial for failure to enact clear and efficient laws and for neglect to provide proper enforcement machinery and adequate penalties for violations.

In short the entire oil industry and all those who are connected with it in official or individual capacities face the fact that a much more active and vigorous support is necessary if conservation measures are to yield the benefits they were designed to bring in the way of greater stability and improved marketing conditions.

The statement of principles issued by the directors of the American Petroleum Institute at their meeting on February 8 is a sound gesture. To be really effective it must be made much more than that. Unless those represented by that organization apply these principles to their own operations and insist upon their observance by those with whom they do business the statement will not be worth the paper it was written on.

It is time to stop pussyfooting, sidestepping and duplicity; time to make a combined and sincere effort to preserve and extend the benefits of real conservation, or else to withdraw all support from attempts at regulation and to advocate their abandonment.

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EVEN though lack of support and enforcement may make conservation an admitted failure it is unlikely that state regulation of petroleum production will be abandoned.

Regulation to Persist

It would be contrary to all precedent in this or other fields if such authority once exercised were to be relinquished. Having set up the machinery of control all those who are concerned with the operation of that machinery have a definite stake in its continuance. The tendency is all in the direction of expanding rather than diminishing the exercise of authority.

Conservation half enforced is worse than no control at all. Repeal of all existing legislation is difficult if not impossible. Self interest, therefore, dictates that every effort be exerted to make the present system work and to improve it as opportunity presents itself. This is not a hopeless task for the petroleum industry because there has been a steady growth of sentiment in the oil producing states in favor of some regulation and restriction of production. Producers themselves, though they may find fault with existing laws or the methods of their application, shrink from facing the consequences of wide-open production in the present state of the oil markets.

The laws under which regulation is carried on are far from perfect. Cooperation between the authorities of the oil producing states is lacking. Legal barriers to united action among the producers themselves for the good of the industry as a whole still exist. With all these drawbacks, however, it remains true that the great obstacle to the full success of conservation measures is the lack of vigorous enforcement of such laws as are on the statute books. This is where the immediate remedy lies and this is the direction in which it must be applied.

Bearing on International Situation

REASONABLE control of production, prevention of indiscriminate waste and loss through unbridled competition in drilling, is not an issue confined wholly to the American industry. J. B. Aug. Kessler, joint managing director of the Royal Dutch-Shell Group, who is well known for his efforts to promote cooperative action among the major oil interests, journeyed from London to New York in the early days of February to bring a message to this effect to American producers. He made it clear that the widespread demoralization of the American market would have the inevitable effect of undoing all that has been accomplished toward the stabilization of the European situation. Mr. Kessler was not on an evangelistic mission. He was not even argumentative. He merely placed the facts before his American friends and left it to them to digest and apply the information.

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Question of Alcohol Motor Fuel

EFFORTS to compel the use of alcohol in mixture with petrol as a fuel for motor vehicles have been made in a number of countries. A survey of such legislation and its results is published in this and subsequent issues of WORLD PETROLEUM. Requirements of a similar sort have been suggested recently in the United States and are embodied in two bills now before the Congress. A like measure is pending in the Iowa state legislature.

Examination of the record shows that laws requiring the use, or at least the purchase by purveyors of motor fuel, of a certain proportion of alcohol have been confined mostly to countries which do not produce petroleum in sufficient quantity to supply the requirements of their own markets. Their purpose is to cut down expenditures for imports and to provide artificially a demand for a product that can be manufactured within their own borders. In the United States no such incentive exists. Other objections to the use of the mixed fuel under American conditions should be sufficient to save the country from a costly experiment and one that would hardly benefit even the farmers whom it is intended to aid.

Difficulties in the way of the general use of alcohol gasoline mixtures are both technical and economic. A study of the subject made by engineers of the Standard Oil Company (Indiana) and summarized by Conger Reynolds of that company reveals numerous obstacles to the satisfactory employment of this fuel. The thermal efficiency of alcohol is below that of gasoline and any mixture of the two is of lower value than that of the petroleum product alone. A practical objection of importance to the motorist is that the mixed fuel requires carburetor adjustments including enlargement of the jets. In Brazil it was found that variations in the grade of alcohol supplied required constant changes in carburetors.

The greatest technical objection to alcohol as a dilutant for motor fuel is its tendency to mix with water. To eliminate water entirely in the manufacture of alcohol is costly and of no permanent advantage as more moisture is absorbed upon exposure to the atmosphere. The present efficient practice of storing gasoline over a layer of water to preserve its purity would have to be abandoned if the use of alcohol were required.

Quite aside from technical obstacles, economic drawbacks should eliminate alcohol-gasoline mixtures from consideration by American legislators. The cost of manufacturing alcohol in the cheapest manner in the United States is approximately twenty cents per gallon and the selling price is currently around thirty cents against less than five cents per gallon for gasoline at the refinery. The cheapest source of alcohol is molasses and any forced increase in its consumption would benefit cane sugar producers only.

Laws compelling the use of a gasoline-alcohol motor fuel would therefore involve replacing some ten percent of gasoline with ten percent of an inferior product costing over five times as much to produce. The question immediately arises: Who would bear the additional cost and for whose benefit would this subsidy be paid? Obviously under present conditions the oil industry, most heavily taxed of United States industries, would be unable to meet the additional burden. It would have to be passed on to the motorist who would be called upon to pay a higher price for a product that could not give the same value and that would add new difficulties to motor car operation. The inevitable result would be a decrease in the consumption of motor fuel, a decrease in the revenue obtained by state and federal government and a decrease in the income of oil companies.

Payment of this subsidy would not, however, benefit the American farmer as alcohol, even with present low prices of excess farm produce, can be manufactured more cheaply from molasses or even from petroleum than it can from corn. Large quantities of molasses are now imported. It is significant that the alcohol-petrol mixture is not used to any extent in any country where the law does not make it compulsory.

Considering the technical and economic difficulties in the way of using alcohol in motor fuel, difficulties that would be much greater in the United States than elsewhere, and considering that the enforced use of such a mixture would be of little benefit to the farmer, it is inconceivable that serious consideration will be given to legislative proposals such as referred to above, once the facts regarding their impracticability are made known.

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Production and World Stability

WITHOUT belittling the urgent necessity of restoring order to their own industry American producers point out, not unjustly, that the United States is the only important oil producing country in the world that materially reduced its output in 1932. As against the drop of 67,000,000 bbl. or roundly 8 percent in the outturn of the United States during the past year as compared with 1931, the rest of the world, taken together, actually increased its crude production by 6,000,000 bbl. Slight reductions occurred in Russia, Venezuela, Colombia, Peru, Canada and Sarawak, but these were more than counterbalanced by the expansion of output in Roumania, Persia, Dutch East Indies, Trinidad, British India and Japan. As the directors of the American Petroleum Institute pointed out in their statement issued February 8, "the subject of domestic crude oil production is inseparably related to the production of other countries." In order to insure international stability it is necessary to hold production within the limits of the world's current demand. Failure to hold the lines in any one important producing sector threatens the entire front so far as the maintenance of world stabilization is concerned.

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Let's Face the Facts in Oil Industry Regulation

Regulatory Laws Certain to Remain—Only Choice Before American Industry Is Between Making Regulation Effective or Enduring It as a Constantly Unsettling Factor. *By E. W. Mayo*

DAILY output of 2,000,000 bbl. has been held before American oil producers as the goal necessary to impart stability to the market situation. They have assumed that the attainment of this level would be accompanied by remunerative prices for crude oil and manufactured products. In the months of December and January last crude production for the first time since 1925 was brought down to this figure. This was accomplished, to be sure, only by closing down the East Texas field during the latter half of December. Even after the reopening of this field, however, daily output, as officially reported, has been only slightly above 2,000,000 bbl.

Viewed solely from a statistical angle the condition of the petroleum industry may be described as a favorable one, more favorable than at any previous time in the past three years. Actually, however, unsettlement has been serious and widespread. Prices of crude and of products have been reduced but the price structure still remains shaky. Crude prices are too low to satisfy producers but too high to permit a profit from refining. Dissatisfaction with proration is acute and the abandonment of state regulation is being agitated in various quarters. The threat to stability has become international and Europe warns that continued demoralization in the American market may upset the balance that has been established on that side of the Atlantic.

It is not surprising under these conditions that many members of the oil industry have concluded that state regulation is a failure and advocate its abandonment. Open the flood gates, they say; let the flush fields blow their heads off. Chaos will prevail for a time; crude may sell for five or ten cents a barrel, but ultimately the industry will get back to a sound economic basis. The strong will survive and the weak will perish. Excess output will be eliminated through the closing down of thousands of wells and the threat of potential overproduction will be removed.

If this were the choice before the American petroleum industry the merits of conservation versus unrestrained production might be worth arguing. Actually there is no such choice. Even though state regulation be pronounced a failure what chance is there of getting rid of it? The answer must be, none. The reasons are both economic and political. Having entered upon a regime of regulation the state governments will not abandon it. State revenues would suffer; a legion of official positions would be abolished; more important still, public sentiment within the states would not support such action. If the conservation commissions in the important oil producing states were to remove all restrictions upon the flow of oil tomorrow there would be an uprising that would lead to new, more severe and possibly more unwise regulation. The only real alternative before state authorities and the oil industry is to make proration effective in accomplishing the purposes for which it was designed or to endure it as an evil which will continue to unsettle prices, hamstring the operation of well organized companies and penalize honest members of the industry for the benefit of those who defy or evade the rules. Facing such an alternative the choice of which method to pursue should not be difficult.

Significant of the progress of thought among leading members of the industry was the statement of principles that should apply to conservation measures enunciated by the Board of Directors of the American Petroleum Institute at its meeting in New York February 8 which declared:

(a) In a broad and general sense the measure of market demand is the consumption of refined products.

(b) Current production should not exceed this demand and should make some allowance for withdrawal from storage, which is now excessive.

(c) Producing capacity being already far in excess of consuming requirements, there is no public interest in developing new pools, and, therefore, production from new pools should be restricted to the utmost limit permitted by the laws of the states.

(d) Both in the interest of conservation and the prevention of waste the production of stripper wells should be the last restricted.

(e) After allowing for the production of stripper wells and the utmost restriction of new pools, the intermediate existing flush pools should be so limited as to bring the total production in line with the total market requirements.

(f) The production for each state should be prorated as between pools on a fair basis, and the production of each pool should be prorated between the property of producers on a fair and equitable basis.

(g) In order for this program to succeed it is absolutely necessary that the lawful orders of the state commissions be rigidly enforced and every person engaged in the industry should assist the commissions in enforcing such orders, and should avoid any and all acts which would directly or indirectly circumvent or tend to defeat such orders.

(h) If the states adequately enforce their conservation laws, the effect should be the marketing of all oil produced at the competitive prices which from time to time are publicly posted.

(i) The subject of domestic crude oil production is inseparably related to the production of other countries, and in order to apply these principles and make them effective in the United States it is necessary for similar principles to be applied to the production of crude oil in other exporting countries.

(j) In addition to this, the important subject of the gasoline tax and gasoline tax evasion cannot be omitted from the picture. The gasoline tax has reached a point where the motor vehicle, because of this and other taxes, is now paying approximately 10 percent of the total tax burden of the United States, including federal, state and local subdivisions, and on an average more than 40 percent of the revenues of the States. This burden has already reduced the consumption of gasoline, the purchase of new cars, and the number of cars in use is now at least 3,000,000 less than three years ago. Gasoline which escapes the tax destroys the competitive price structure determined by economic conditions and this in turn reacts on the conservation program in the same manner as the surreptitious production of crude oil.

The significance of this declaration is that it represents an agreement on fundamental points among representatives of the principal organization of oil interests in the United States. Some of these, such as the restriction of production from new pools, have not been clearly defined

heretofore. As the statement itself says it is a contribution to sound thinking on the subject of conservation within the industry itself.

As in the case of all matters of public policy and administration, however, the practical application of sound methods is even more important than their enunciation. What is needed to make regulation and proration practically efficient?

To the average member of the oil business the acid test of proration is its relation to price. He recognizes the importance of avoiding undue physical waste of the important commodity with which he deals, but if there is to be regulation and restriction he feels that it should enable him to get a living return from his investment and his labor. In fact, as the technocrats have pointed out to us and as we very well knew before, business cannot maintain itself permanently without a profit. Why is it that after conservation and proration laws have succeeded in staunching the flow of oil to a point where its volume is practically not in excess of current needs it is still impossible to win a fair return from producing, refining or marketing? The answer, as every practical oil man knows, is that there is still too wide a gap between authorized and actual production and that constant offerings of distressed oil, legally or illegally produced, break down the price structure. So long as distressed oil, that is oil which must find an immediate purchaser regardless of price, remains a continuing factor in the situation market stability is impossible.

The extent to which oil is produced in evasion of proration regulations is largely a matter of guesswork. It has been estimated variously at from 25,000 to 100,000 bbl. daily. No doubt it has fluctuated greatly from time to time. The important fact is that it has been sufficient to undermine the price structure, not only in the areas in which it actually has been distributed but throughout the greater part of the United States.

The elimination of oil produced in violation of laws and regulations is obviously a matter of strict and honest enforcement. That statement does not dispose of the problem but it is the only ultimate answer. Oil legally produced that still falls within the distressed class calls for somewhat different treatment.

There are three sources of distressed oil that is legally produced. It comes from wells that are operating in accordance with proration rules but lack connections for taking off their output, from wells that are producing in excess of allowables but are protected by injunctions, and from wells having pipeline connections controlled by companies that are unable or unwilling to take their full output at the established price.

To prevent the first of these conditions it is necessary to permit the bringing in of new wells only when assurance can be given that connections will be supplied without unreasonable delay. The remedy for injunctions obviously is for state commissions to be guided by legal advice that will make their orders conform to their vested authority. The reluctance of pipeline owners to take oil from wells with which they have connections results from inability to use or dispose of this oil profitably. It can be overcome by preventing excessive production and by avoiding attempts to maintain a crude price not justified by the price of products.

Conservation commissions are not made up of technical experts in oil production. Their effort, if they are honest, is to fulfil the difficult task of making equitable allocations between fields and between producers in a particular field. They should have the assistance of the best technical information in the industry in finding a sound basis for determining individual quotas.

State conservation laws need improvement. The oil industry can aid in their improvement by studying their operation, pointing out their defects and suggesting useful amendments. State authorities may not always welcome such suggestions but publicity will supply the lever needed to remove this obstacle.

Oil companies can and should use their influence for the maintenance of an economic price level. Premature efforts to advance crude prices before a corresponding level in the prices of products can be established do more harm than good. When the inevitable reaction occurs the purchasing companies are subject to unmerited criticism. With an economic price level the purchasing companies should, and undoubtedly will, take all available legal production so long as it is not excessive in amount.

Demand is the final price determinant in all commodities. Excessive taxation, tax evasion, and legislative enactments that restrict demand, exercise a depressing influence on price. Where applied to or proposed for petroleum products they should be fought by the entire industry with every ounce of its power.

Independent producers, land owners, lease and royalty holders, derive from regulation greater proportionate benefits than the large integrated companies. They hold much greater political power and are in a far better position to influence sentiment and action within the states. Their organized influence should be exerted for the adoption of equitable laws and for their stringent enforcement.

Regulation is not a garment that the oil industry can put on or remove at will. It is a fact to be faced and the sensible way to face it is to make it effective and therefore endurable.

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International Congress and Exhibit in England in July

AT THE SAME time that the World Petroleum Congress organized by the Institution of Petroleum Technologists is taking place in London the International Oil Industries Exhibition will be displaying in a striking manner the advances that have been made in the petroleum industry in all parts of the world. The World Petroleum Congress which is expected to attract technologists from a number of different countries will be held at the Imperial College of Science and Technology, South Kensington, England. It is scheduled to begin on July 19 with a reception and a private view of the International Oil Industries Exhibition.

On Thursday, July 20 the Council of the Institution of Petroleum Technologists will give a dinner to the foreign delegates to the Congress and films will be shown in the evening illustrating various features of the petroleum industry. A banquet open to all members of the Congress will be held on July 24 and a smoking concert on July 25. On Saturday and Sunday, July 22 and 23 visits will be arranged to plants of interest.

Papers covering geology, engineering, refining, chemistry and standardization will be delivered during the four days that the Congress is in session.

The International Oil Industries Exhibit will display models and equipment used in the oil industry, in drilling, refining and all other branches in a strikingly modernistic setting. Every effort is being made to make the Exhibit truly international, to show the latest advances in technique, and the most modern and efficient types of equipment. Booths will be occupied by exhibits furnished by several important oil companies and by equipment concerns which specialize in supplying the petroleum industry.

Oil to Supply 45 Percent U. S. Energy in 1950

A.I.M.M.E. Meeting Discusses Interesting Papers Covering Oil's Place in Energy Supply, World's Proven Reserves, Science's Achievements in Persia, and Taxation in Roumania.

AT THE annual meeting of the American Institute of Mining and Metallurgical Engineers, which took place in New York from February 20 to 23, papers presented before the Petroleum Division covered in detail the domestic and foreign production developments, while round table discussions dealt with current marketing conditions and with stabilization efforts to date. Dean Henry M. Bates, of the Michigan Law School, addressed the meeting on the subject of Legal Aspects of an Oil Industry Stabilization Program.

W. Spencer Hutchinson and August J. Breitenstein presented a very valuable and unusual long range forecast of crude oil and natural gas consumption in their paper "Competitive Relation of Coal and Petroleum in the United States." The fuels analyzed in this paper are: (1) the coal groups including both bituminous and anthracite coal and (2) the petroleum group, including not only petroleum but natural gas and natural gasoline. It is shown that in the United States in 1900 coal supplied 91.3 percent of total energy produced, while petroleum and its products were responsible for but 4.3 percent, with hydro-power supplying the remaining 4.4 percent. In 1930 the proportional importance of fuels changed radically, coal supplying 60.3 percent of the energy, petroleum 31.6 percent and hydro-power 8.1 percent. The estimate for 1950 allocates 46.6 percent of total energy to be produced in that year to coal, 45.3 percent to petroleum and 8.1 percent to hydro-power. The authors in their forecast assume that the energy demand is independent of any one of the fuels and likewise independent of the supplies or cost of any single fuel just so long as there is abundant and widely distributed supply of one or more of them.

THE FOLLOWING tables give a detailed statistical analysis of consumption of various fuels in the United States only, allowing for exports and imports and for stocks at the beginning and end of each year, and such consumption is reduced to thermal units on the basis of calculated actual "thermal efficiency" in the years under analysis, and further tabulated for fuel and energy consumption per capita of population.

This most thorough study of energy derivation and consumption concludes that if it is accepted that the petroleum reserves available at low cost will last for 20 years, then the outlook for the coal industry is one of little or no growth, while petroleum is expected to double its market during the same period. It is further stated that the magnitude of the competitive groups, coal and oil, eclipses all other mineral and metal industries, whether they be measured in terms of tonnage or dollars; the petroleum group occupies a favored position so long as reserves of oil continue to be ample.

VALENTINE R. GARFIAS presented a valuable survey "Estimate of World Present Proven Oil Reserves." The author states that "some idea, however approximate, of the available reserves of essential minerals is of vital importance in mapping their development and the future trend of related industries. Particularly if it is kept constantly in mind that these estimates, which are never intended as a final word, must be continually subject to revision in accordance with the changes in their component factors. The value of these estimates, therefore, hinges on the clear understanding that they can only apply within the limited time when the controlling factors remain unchanged. It should be understood, however, that while estimates of possible and probable oil deposits are as a rule but idle conjecture, appraisals of proven oil reserves can undoubtedly be made with an ever increasing degree of accuracy . . . The United States with proven reserves estimated at 12,000,000,000 bbl., or 48 percent of the world's total, and with 65 percent of past production easily outranks other countries. But these reserves, important as they are, when compared to the probable future consumption in the United States are far from impressive. In fact, our proven reserves will prove inadequate to meet demands for more than a few years unless there should be a pronounced falling-off in demand. On the contrary, the very limited oil consumption in Persia, Venezuela, Roumania, Colombia and Iraq will necessitate the marketing outside these countries of the bulk of their reserves which aggregate 7,600,000,000 bbl. As a result, and although the Persian

Consumption of Mineral Fuels in the United States

	1850	1870	1890	1910	1930	Forecast 1950
Bituminous Coal						
(thousands of tons)	2,880	17,719	110,785	407,257	449,094	444,000
Anthracite Coal						
(thousands of tons)	4,138	15,528	45,597	81,110	67,925	55,500
Petroleum						
(thousands of barrels)	none	2,553	30,874	160,000	868,484	1,419,000
Natural Gas						
(millions of cu. ft.)	none	none	none	509,155	1,940,000	3,800,000
Natural Gasoline						
(thousands of barrels)	none	none	none	100	51,762	126,000
Hydro-Power						
(thousand HP plant capacity)	622	1,025	1,555	4,650	13,808	
Effective Energy Supply in Trillions of British Thermal Units						
Coal	32	173	955	3,620	5,443	6,760
Petroleum	none	3	41	405	2,857	6,570
Hydro-Power	15	32	53	316	731	1,170
Total	47	208	1,049	4,341	9,031	14,500
Population and Energy						
Population (millions)	23.2	38.6	62.9	92.0	122.8	154.0
Energy per capita						
(millions of B.t.u.)	2.	5.	16.	47.	73.	94.
Consumption of Fuels						
Coal, tons per capita	0.30	0.86	2.49	5.31*	4.21	4.16
Petroleum, bbl. per capita	none	0.07	0.49	1.74	7.07	12.47
Natural Gas, M. cu. ft. per capita	none	none	none	5.53	15.80	31.17
Natural Gasoline, bbl. per capita	none	none	none	0.001	0.42	1.06

* Maximum per capita coal consumption was reached in 1917—6.08 tons.

and Colombian fields are now practically under unit control, and their output may be to some extent regulated in line with demand, those in Venezuela, Iraq and Roumania will continue to be, in varying degrees potential sources of instability in the world's oil trade . . . In a general way, according to the information now available, it may also be stated that the world's proven oil reserves are far from impressive when compared to the magnitude of the reserves of other essential products and to the probable future trend of consumption. The estimated proven reserves are equivalent to twenty odd years at the present rate of consumption but as all the reserves can not be produced within that time, it is obvious that additional supplies will have to be discovered in the next few years to assure a more permanent supply in line with consumption."

Estimated Proven Oil Reserves

In Millions of Barrels

	Proven Reserves	Total Production to Dec. 31, 1932	Production in 1932	Years of Past Production
United States ..	12,000	14,787	784	74
Russia.....	3,000	2,883	154	72
Iraq.....	2,500	5	1	6
Persia.....	2,200	482	45	20
Venezuela.....	2,000	761	121	16
Dutch East Indies.....	1,000	547	38	40
Roumania.....	500	472	48	76
Colombia.....	400	121	17	11
Mexico.....	300	1,665	32	32
India.....	100	224	8.2	44
Peru.....	100	141	10	37
Argentina.....	100	95	13	25
Trinidad.....	90	84	10	24
Poland.....	50	231	4	59
Japan.....	40	65	2	58
Sarawak.....	30	52	2.3	20
Canada.....	10	33	1	71
Egypt.....	10	25	1.7	22
Germany.....	10	25	1.8	53
Ecuador.....	10	7	1.7	16
France.....	5	7	0.5	15
Others.....	10	5	0.8	
Total.....	24,465	22,717	1,297	

SIR JOHN CADMAN'S paper discussed "Persia," laying the greatest stress on scientific research and scientific operation of the Persian oil fields, which has resulted in unparalleled conservation of natural energy and in great economies of development and operation. Thus in the Masjid-i-Sulaiman field the drop in reservoir pressure during the last four years has been but 5 lbs. per square inch, or about one percent, even though in that period of time 140,000,000 bbl. of petroleum were recovered. Also due to scientific control no water is as yet produced at all with the oil in the Masjid-i-Sulaiman field, a remarkable achievement.

During the last year the Haft-Kel field was further extended, its present proven productive area covering 40 square miles, 25,600 acres, and the pool promising to be as important as the Masjid-i-Sulaiman. Production from the Haft-Kel field was increased to about 14,000,000 bbl. in 1932, from 10,500,000 bbl. in 1931. The Asmari limestone is the producing horizon in the Haft-Kel field, as it is in the Masjid-i-Sulaiman, wells ranging in depth from 2,000 to 5,000 ft. and averaging initially 20,000 bbl. per day, with some wells producing initially as high as 40,000 bbl. per day.

Currently very important deep drilling work is being done in order to determine commercial possibilities of formations underlying the Asmari limestone.

IONEL I. GARDESCU presented a paper on "Petroleum Developments in Roumania in 1932." The production of crude oil in Roumania in 1932 was 52,560,000 bbl., an increase of 6.8 percent over the preceding year. The Gura-Ocnitzei field was the chief producer increasing from 38,800 bbl. per day in the beginning of the year to 80,700 bbl. per day at the close, due to highly competitive development. The Boldesti and Moreni fields were both curtailed to about 21,000 bbl. per day. During the first 9 months of 1932 a total of 116 wells was completed, of which eight were dry holes; 73 oil wells were completed in the Lower Pliocene (Meotian); 31 in the Upper Pliocene (Dacian), and four in the Oligocene formations. On October 1, 1932, 47 wells were drilling. Rotary equipment now drills 98.5 percent of total footage made in Roumania. The deep development in Roumanian fields becomes evident when it is indicated that the average depth of Lower Pliocene (Meotian) oil wells is 4,100 ft. in Gura-Ocnitzei field, 7,900 ft. in Boldesti field and 5,900 ft. in Moreni field.

Domestic consumption of petroleum products in Roumania remained unchanged during the last five years at about 23,300 bbl. per day, "while exports have increased 240 percent in volume and have declined six percent in value." The domestic taxation of petroleum products is excessive, rendering them a luxury, as indicated in the accompanying table.

Roumanian Taxes

	Price per Gallon	Taxes per Gallon	Total per Gallon
Gasoline.....	$0.028	$0.158	$0.186
Kerosene.....	0.014	0.034	0.048
Gasoil.....	0.007	0.040	0.047
Lubricating Oils.	0.156	0.254	0.410
Fuel Oil.....	0.005	0.006	0.011

Pew Discusses Truck Taxation

ADDRESSING the Rotary Club of Philadelphia, J. Howard Pew, president of the Sun Oil Company, gave a highly effective reply to the claim made in support of proposed restrictive motor truck legislation that motorists have not contributed in fair proportion to the cost of improved highways. Using the Pennsylvania road system as an example Mr. Pew showed that the total amount that had been spent on improved highways in the state was $590,000,000, including both construction and maintenance. The annual cost of repair, maintenance, overhead and depreciation is $36,000,000. The amount paid by the motorists in taxation is $63,000,000. The net profit to the state is $27,000,000. The road system represents a capital value to the state of $366,000,000 and the motorists are paying 75 percent more than is necessary to cover the cost of upkeep and operation of the state highways. By a further analysis of the situation Mr. Pew showed that trucks represent 13.2 percent of all motor vehicles and pay 36 percent of the taxes.

Transportation difficulties in Iraq: trucks carry thirty and more tons of pipe over rough terrain for the Iraq pipeline.

60 Wall Tower

Home of Cities Service

Balconies overlook the city and harbor

Looking upward from the sixty-seventh floor

View from the sun room

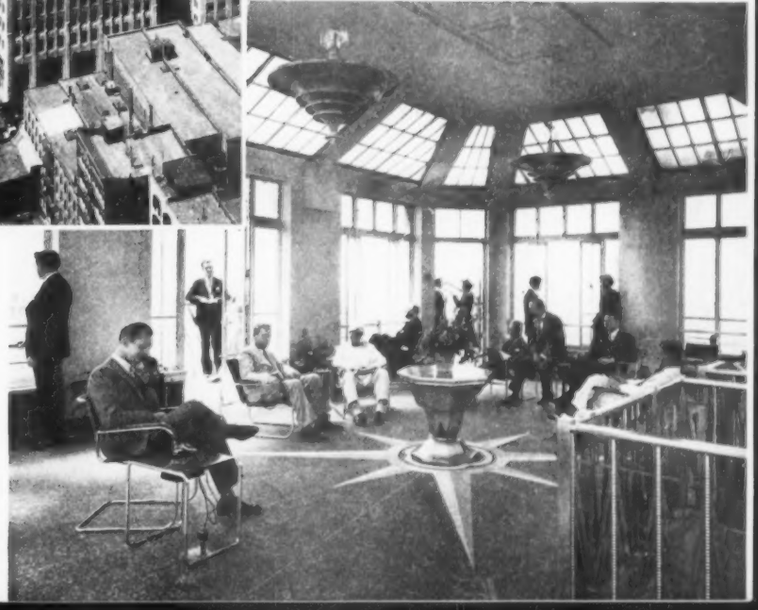
Beautifully de signed elevato door

Reception hall, ground floor

Photographs by

Wurts Brothers

Solarium on the roof



British Petrol Prices Withstand U. S. Cuts

Partial Collapse of American Price Structure Affords No Logical Basis for Reduction in Britain, but Has Weakened Market Morale. Effect of Fluctuations in Exchange Rates.

NOTWITHSTANDING the profound disturbance to the world petroleum situation caused by recent events in the United States, lower prices for crude oil and gasoline in America do not necessarily provide a reason for an immediate cut in British petrol prices.

Prior to the latest series of price reductions in Mid-Continent and Pennsylvania crude, British consumers of petrol looked on the market as a steady one, with some possibility of a price rise and little or no prospect of a cut. They realized that if they were paying higher prices than before, distributors were far from making exorbitant profits at their expense.

The popular press in Britain was not long in bringing the possibilities arising from the change in United States conditions to the notice of the public. Before the end of January one journal had set afoot a definite rumor that a cut in British petrol prices was to take place immediately. This rumor gained considerable currency, and was responsible for a setback in oil share prices on the London Stock Exchange. Subsequent events have shown that the press comment which started it was merely a badly aimed "bow at a venture." The share market has recovered its equanimity, and the motoring public talks less of a petrol price reduction; but the impression remains that the world oil position has been changed for the worse by the weakness of the American price structure, and that a cut in British prices is at least within the bounds of possibility. London oil circles admit that there has been a definite change in public opinion on petrol prices during the past few weeks; but this is not an admission that prices in Great Britain should be reduced immediately.

Not only has the American price collapse weakened the oil position by making petroleum products available for export at low prices, but it must also have tended to weaken the morale of producers throughout the world. The United States price decline is direct evidence that the situation there is by no means stabilized to the degree assumed in last year's negotiations for world cooperation. This may well have engendered doubt in the minds of some producers as to the immediate possibilities on world stabilization.

British oil industrialists and distributors have a fairly extensive knowledge of the American position, and are inclined to make due allowance for the immense difficulties confronting those who are working for effective proration in the United States. Some other European countries are probably less sympathetic, and reports have been current recently of a disinclination among one or two Roumanian producers to conform to the quotas necessary for export restriction. This is not a matter for surprise, for the weakness of Gulf prices is forcing down the Constanza quotation thus depriving Roumanian producers of some of the benefits which they had hoped to receive from the curtailment of production and exports.

What applies to Roumania is also applicable, although less forcibly, to oil interests in other quarters of Europe. Making due allowance for tanker freights, differences in distribution costs, tariffs and exchange, prices in Europe have been found to conform ultimately to quotations in America. If Roumania and Russia are definite factors to be reckoned with, the United States has a predominant influence as a price regulator in Europe.

If low American prices have weakened the European position, that is no reason why they should cause indiscriminate cuts in retail prices. Price adjustments must necessarily depend on local circumstances, as well as on world conditions. In the case of some European markets, cuts may be called for by internal competition; which may or may not be traceable to the weakness in America, but this position does not appear to have been reached in the British market. There are, indeed, several good reasons why prices here should not be allowed to respond to the lower level now ruling across the Atlantic.

In the first place, British prices have never been in line with the higher levels obtained by American distributors during the past year or so. In making this comparison, of course allowance should be made for the exchange factor. When Great Britain suspended the gold standard in September 1931 no adjustment was made by distributors to compensate for the higher sterling prices which had to be paid for imports. It was only after a lapse of a year that selling prices were raised by 3d per gallon. If the tax of 8d per gallon is deducted from the previously existing price of 1/4½d per gallon for No. 1 petrol, this price increase was approximately 35 percent, an adjustment which no more than compensated for the decline in the exchange value of sterling.

In another sense the exchange position may still be considered a factor in the petrol market. Soon after Great Britain went off gold there was a general impression that sterling might soon recover to its pre-war parity. This naturally influenced those who had oil contracts to negotiate, and thus tended to keep British petrol prices down. The present exchange position is that official British policy is designed to keep sterling from rising, while there is a school of industrial thought which would not be averse to a decline in the pound to a level still lower than anything previously touched. Although, therefore, the recent rise in sterling should, on the face of it, have tended to make a downward adjustment of British prices in conformity with the American trend a rational process, this is by no means the case. The recent improvement in the value of the pound is largely seasonal, and probably will be reversed later in the year. It should have no depressing effect on British quotations for petroleum products. Prices for the latter having been raised to conform approximately to sterling depreciation and current official exchange policy, if it has any effect at all, should make for maintenance of oil prices in the British market.

There is another aspect of the British market which is often overlooked by the press and the public. The majority of companies distributing in Britain buy their products either in a crude or refined state from their own subsidiaries or from undertakings with which they have a close financial connection. The importance of changes in the American price level to companies in this position can easily be exaggerated. In effect a distributing group buying from one of its own mem-

bers is merely producing, transporting and selling a product and making a profit on the transaction as a whole. If, owing to changes in the American price level, it has to pay more or less for the products it purchases, this is offset by corresponding increases or decreases in the income of its own associates. To this extent, price changes make no difference since they do not affect the total cost to the group of the product sold. The effect of American price collapse appears more likely to reach the British market through its effect on European marketing conditions.

Although there are apparently good reasons why British prices should be maintained, it is always possible that competition, or the prospect of it, may eventually make a price reduction necessary. It cannot be said, however, that such a position shows immediate signs of developing. Roumanian stocks in Great Britain are still stated to be moderately large. It is always difficult to arrive at a reasonable estimate of petroleum stocks of this kind, but there is evidence that the amount of Roumanian oil in storage in Great Britain is very much less than it was a short time ago, a gradual further reduction should be effected as a normal result of Roumanian restriction.

An extensive publicity campaign by R.O.P., advertising Russian petrol at 1/5d may, perhaps, be read as a sign of competition. This petrol is not the R.O.P. "Zip" brand which sells at 1/6½d per gallon. The publicity accorded to the cheaper petrol by Russian Oil Products may be an astute judgment of the trend of the British petrol demand. There is no doubt that the motoring public has been seeking cheaper petrol since the last price advance, and that there is greater demand for commercial grades than before. R.O.P. evidently hopes to meet a medium demand for a cheap petrol, still classed as No. 1.

In view of all the factors operating in the British market, there are reasons why prices should not be immediately adjusted to the lower level of United States products. It is felt here that the decline in America may lead to making proration more efficient, and may not be more than a temporary movement. It would therefore be unfortunate if it were to upset the equilibrium of the British price structure through precipitous adjustments by distributors and hope is expressed that the present British level may be maintained.

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French National Economy in Relation to Petroleum

Refinery Construction Program and an Interest in The Iraq Petroleum Company are the Steps Taken by the French Government to Develop a National Petroleum Industry.

By M. David Gould

WITHIN two years the French gasoline market, the second largest in Europe, will be lost to the world export trade. The United States, which now supplies almost exactly a third of Franch gasoline imports, will be the hardest hit, particularly as France has been among the few nations to show a substantial increase in gasoline consumption in the face of the world crisis.

In two years the great French oil program, which was initiated shortly after the end of the war, will be well on its way to completion. Beginning with an insignificant refining capacity and no convenient access to crude supplies, the end of 1934 will find France producing as much gasoline as it now consumes, and the following year will find the pipeline from Iraq to the Mediterranean completed and ready to supply the major part of France's requirements of crude. In addition, auxiliary sources of supply have been built up in the form of domestic production in Alsace, and in the "carburant national," the national motor fuel, composed of an alcohol-gasoline mixture.

The French petroleum policy had its roots in the critical situation which was disclosed at the end of 1917, when barely a month's supply of gasoline was available for the armed forces, and the tankers of the Standard Oil Company were over in the Pacific supplying the insatiable Oriental market. It took the direct intervention of Clemenceau and President Wilson to overcome the crisis, build up adequate reserves of motor fuel, and assure the diversion of tanker tonnage to the Atlantic to meet French needs.

The importance of a reliable source of petroleum products became evident at that time and the seeds of the present French nationalistic oil policy were sown. In the past fourteen years, France has cleverly manoeuvered between the interests of England and America, favoring now one, now the other; experimenting with laws, taxes, tariffs, and other types of governmental control over the oil industry, until by a process of trial and error the present situation, with its prospect of national self-sufficiency based on a foreign crude-oil supply in two to three years, has been achieved.

The objectives of the program have been: to transform an inert and quasi-monopolistic group of refined products importers and dealers into an aggressive group of manufacturers, increasingly free of control by foreign capital; to build up adequate shipping and storage facilities; to explore the possibilities of stimulating the production of alcohol and other alternative fuels; to develop a substantial participation in the control of a major source of crude oil supply; and finally, to keep all these activities firmly in line with government policy, but at the same time allow enough play to individual initiative and the profit motive to insure the energetic expansion which the program called for.

Building a National Petroleum Industry

WITHOUT going into the tortuous deviations of French oil policy during the whole period since the war, we may say that the turning point of the successful application of this policy came in March, 1928, when two laws were passed on which

the industry as now constituted rests. The first of these provided for a system of import licenses, extending over a period of three years, which limited supplies and thus restricted the activities of large companies organized outside of France, furnishing a protective wall behind which a national industry could be built.

The second established a spread between the tax on refined products made from imported crude oil and the tariff on imported refined products which makes domestic refining in France profitable and makes it difficult for imports of refined products to compete.

Under the regulations provided for by the first law, the quotas set forth in the accompanying table have been authorized, for the three-year period from April, 1932 to April, 1935.

Authorized French Imports of Specified Petroleum Products

	Barrels
Standard Oil	3,703,000
Royal Dutch-Shell	2,664,900
Anglo-Persian	1,759,800
Vacuum Oil	1,460,900
Desmarais	2,454,900
Lille, Bonnieres et Colombes	916,300
Raffinerie de Pétrole du Nord	735,000
Others	5,698,000
Total	19,392,800

The second law provided an import tax of 1.75 paper francs per gallon of crude oil, compared with 1.69 francs per gallon of gasoline and the same rate for kerosene. In authorized refineries operating under supervision of government authorities, the tariff is levied not on the crude but on the refined products as produced, and at the reduced rate of 1.36 francs per gallon, gives an advantage of 0.33 francs per gallon to gasoline and kerosene refined in France.

At the same time, the tariff on imported gas oil was lowered to 0.051–0.102 francs per gallon, and that on fuel oil and residues to 0.051 francs per gallon. Lubricating oil, on the other hand, was given the high rate of 2.62 francs per gallon.

The results of this measure were to encourage domestic refining as against importation of refined products, and to protect the small domestic crude oil production centering around Pechelbronn, in Alsace, amounting to approximately 520,000 bbl. a year, or 1.5 percent of national requirements. This crude is particularly rich in lubricating oil fractions, and importation of lubricating oil to compete with this domestic production is discouraged by the high duty on lubes. The third effect is to stimulate the consumption of gas, fuel and other heavy oils.

The principle of this law has been retained through a number of modifications. The most recent of these combines the turnover tax with a basic import tax of two percent on crude oil, four percent on semi-finished products, and six percent on refined products, into a "taxe unique" or single tax based on an agreed or "conventionnel" valuation for each class of imported products calculated each month on the basis of average prices for the preceding month.

French Refinery Construction Program

Crude Throughput in barrels

Company	
Standard Oil of N. J.	7,000,000
* Royal Dutch-Shell	5,250,000
* Anglo-Persian	3,150,000
* Socony-Vacuum	2,520,000
Compagnie Française de Raffinage	6,650,000
* Societe Pechelbronn	1,260,000
Raffinerie du Nord	1,960,000
Consommateurs de Petrole	280,000
Compagnie Berre	2,632,000
* Societe Gironde	1,890,000
* Societe Brest Port-Petrolier	1,400,000
Total	33,292,000

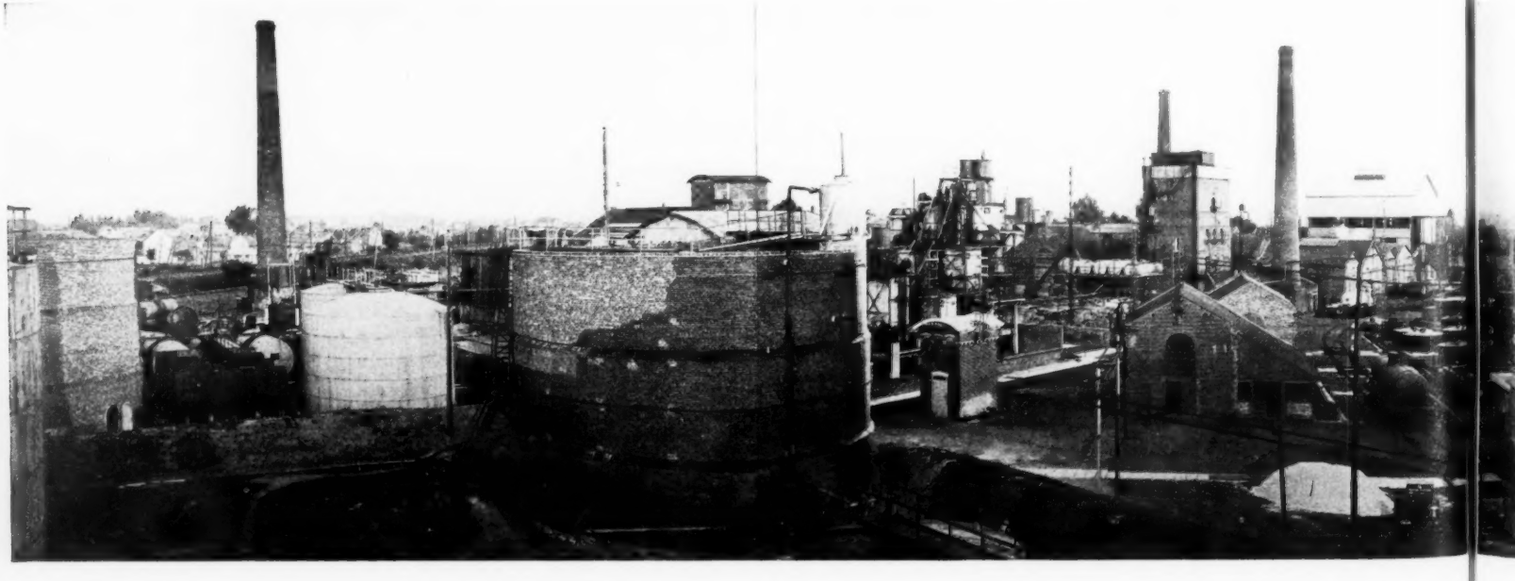
* Cracking.

These laws were supplemented by a decree in April, 1931, requiring the firms which had import authorizations to have refineries in operation by October, 1934. Under this decree, refinery capacity set forth in the accompanying table is scheduled and/or has been authorized for completion by that date (the figures are given here in terms of throughput capacity in barrels of crude, and are not closely comparable with figures previously made available in this country by the U. S. Department of Commerce).

This total compares with the total of 21,810,250 bbl. of licensed production authorized under the quota system, exclusive of "free" imports of fuel oil, and of limited amounts of other products imported by concerns which have not arranged for refining facilities. Of this licensed production, 15,445,500 bbl. are gasoline, very close to the actual imports of gasoline in 1932 of 16,831,491 bbl. This indicates the probability that the French market for imported gasoline is scheduled to disappear in two years.

Of course, some activity in construction of refining capacity had been noted even before the 1928 legislation came into effect: the Pechelbronn installations were enlarged in 1927; the Anglo-Persian plant at Paix with some recent additions, and part of the Shell plant at Petit-Couronne, and the Berre plant, were handling a few hundred thousand barrels a year. Completions last year included the Gironde plant at Bec d'Ambes, scheduled to produce 1,150,000 bbl. of motor fuel a year. The Berre plant, which is to be officially inaugurated this year, with a planned output of 1,350,000 bbl. of gasoline a year, received its first shipment of crude in February 1932. The Dunkirk plant of the Raffinerie de Pétrole du Nord, with a scheduled output of 920,000 bbl. a year, has been in operation since August of last year. Early in January of this year the

Refining in France: general view of the Societe General



enlarged Petit-Couronne plant of the Royal Dutch-Shell was officially opened. Whereas the old plant had a throughput capacity of 1,400,000 bbl. of crude a year, and tankage for 385,000 bbl. of crude and 170,000 bbl. of refined products, the present plant can handle over 4,600,000 bbl. of crude a year, and has 1,450,000 bbl. of storage capacity. The pipe-still system is used, cracking being confined to the company's other scheduled plant at Pauillac, near Bordeaux, due for completion this year. Other new plants scheduled to open before the end of 1933 are the Standard Oil plant at Port-Jerome, the Normandie, Vacuum, the second Anglo-Persian plant at Lavera, the Cie. Française de Raffinage at Martigues, and the little Consommateurs plant at Donges.

Refinery Construction to Date

FIGURES for crude and refined imports already, however, show the effects of the refinery program.

French Petroleum Imports, 1930–1932

(Barrels)

	1930	1931	1932
Gasoline	14,986,368	17,088,928	15,831,992
Gas oil	1,072,757	1,779,358	2,488,500
Fuel oil	3,258,773	4,136,594	4,681,894
Crude oil	3,163,314	3,629,913	7,243,733
Total	22,481,212	26,634,793	30,246,119

The outstanding features of the accompanying import table are: the steady increase in total imports; the increase in importation of crude while importation of gasoline declined; and the steady and rapid increase in importation of gas and fuel oils.

French Refinery Results 1931–1932

(Barrels)

	1932	1931
Crude charge	7,929,467	3,713,381
Kerosene output	367,537	203,527
Gasoline	2,750,039	797,274
Lube oils	414,890	330,652
Gas oil	665,378	230,902
Fuel oil	1,317,589	639,835
Road oil	1,015,469	534,618
Crude for recharging	5,656	1,022

Paraffin and petroleum coke output for 1932 was 7,226 tons; for 1931, 5,438 tons.

The results of refinery activity during the past two years, based on the doubled volume of crude imported, are illustrated in the accompanying table.

The improved ratio of gasoline output to charge reflects the higher efficiency of the new capacity brought into operation during the year.

Carburant National

WHILE the national oil program has thus achieved or is well on the way to achieving several of its main objectives, it has still not been able to solve the problem of adding substantially to its available supplies of motor fuel through the addition of alcohol. The dilemma arises from the fact that the price of alcohol must be kept low if its use for mixing with gasoline is to be encouraged; on the other hand, it must be kept high if the production of alcohol is to be encouraged.

The pre-war production of industrial alcohol from beets in France was over 39,000,000 gal. a year. This figure was not again reached until the year 1930–31, in spite of the encouragement by the government. The present policy of the government is to pay for the alcohol at a figure based on the price of beet sugar. This works out at about 7.69 francs per gallon, compared with a tanker price for gasoline c.i.f. Rouen of less than 1.11 francs and a retail price under 6.92 francs at the filling station. Consequently the government has to sell its alcohol to the gasoline blender at a loss, currently at about 4.42 francs per gallon.

Under such conditions, the takings of alcohol by the oil industry have increased from 5,746,000 gal. in 1929 to about 39,000,000 gal. last year. The lack of enthusiasm for the mixture is shown by the fact that fines, based on delay in taking down the required amounts of alcohol, at the rate of 0.01 francs per gallon per day of delay after the expiration of 60 days of grace, amounted to 5,000,000 francs last November alone.

At the same time, the beet sugar and alcohol industries have been steadily increasing their output on the basis of this subsidy, as shown in the accompanying table.

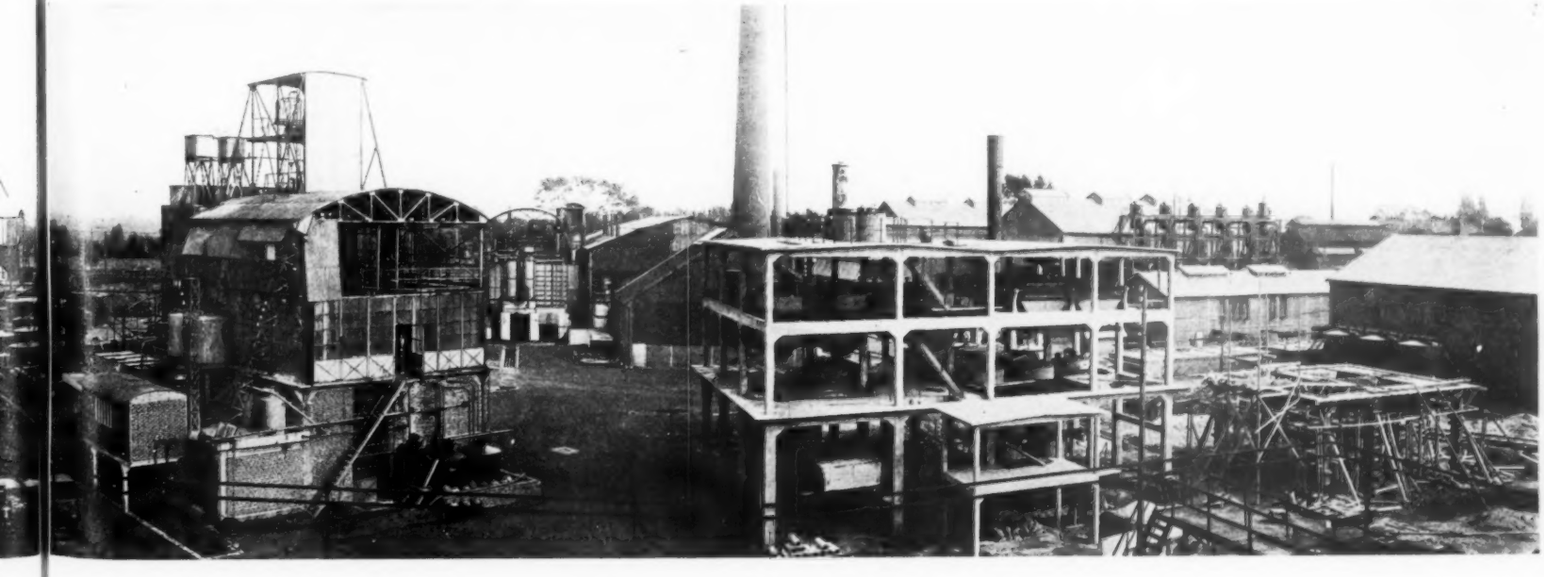
French Production of Alcohol from Beet Sugar

Year	Gallons
1926–7	15,762,136
1927–8	20,372,942
1928–9	21,834,670
1929–30	27,836,536
1930–31	38,654,576
1931–32	44,668,000
1932–33 Estimated	61,100,000

In view of the increasing fiscal difficulties of the French budget, the burden is considered too high, since the maximum possible loss might run up to some 400,000,000 francs a year. It is therefore being proposed that, beginning with the year 1933–34, beyond 44,200,000 gal., the price to be paid by the government should no longer be based on the price of beet sugar, but on the price charged to the most-favored industry, which would of course be the petroleum industry. This will have the immediate effect, if adopted, of reducing the production of alcohol to a maximum of 44,200,000 gal. per year.

The government has already retreated on the question of the "carburant national," changing the rate of admixture with gasoline from a 50–50 ratio to a 25–75 ratio, and in practice reducing its utilization to the "poids lourds," the heavy-duty commercial vehicles. Adoption of the measure now being suggested by the government would in effect be an admission that the economic dilemma

des Huiles de Petrole refinery at Courchelettes.



caused by the attempt to stimulate two industries at the same time, one demanding a high price and the other a low price for the same product, is in fact insoluble, except on the basis of a large and increasing drain on the government treasury.

Gasoline Prices and Taxes

AT THE SAME time that it is trying to lessen the financial burden incurred with respect to the petroleum industry by its policy of favoring the alcohol-gasoline mixture as the "carburant national," the government has been steadily adding to the tax burden. A recent analysis of the retail price of gasoline in Paris discloses the fact that, inclusive of the recently proposed additional tax of 0.577 francs per gallon, total taxes and tariffs amount to four times the tanker price landed at Rouen.

Analysis of French Gasoline Cost

	Francs Per Gallon
Tanker price, c.i.f. Rouen	1.10
Government taxes	4.22
Paris municipal tax (octroi)	0.19
Filling station spread	0.76
Transportation and overhead	1.15
Cost, for retail distribution	7.42

It is true that the number of automobiles registered in France has kept increasing consistently, contrary to the situation in the United States, for instance, and is now over 1,500,000 units. But the increasing tax burden on the one hand, and the increasing depth of the depression in France on the other, where it has not been felt as sharply as in the other great industrial states for a variety of reasons—these are both cutting into motor fuel consumption, and at a time when an enormous refinery construction program is under way, it is felt that the tax situation represents one of the difficulties in the way of the oil business in France.

The retail price itself, equivalent to some 30 cents a gallon in American terms, is far from cheap, nor is there any likelihood of an early substantial reduction while the budget remains unbalanced, and its balancing requires the present rate of taxation.

In this respect, however, French treatment of the petroleum industry is an integral part of its entire economic policy: a high wall of tariffs, quotas and other restrictions, maintaining internal prices while world market prices are declining, is characteristic of the entire situation of French economy today.

Prospects of the French Program

WHILE ONE hole after another in the structure of the French oil industry is being plugged the basic question of crude oil supply remains. It is being solved by a series of temporary measures, such as the contracts with Roumania and with Russia for 400,000 bbl. a year of crude from each for periods expiring in 1937 and in 1935 respectively.

The fundamental reliance is being placed on the development of the Iraq fields, which were extensively discussed in WORLD PETROLEUM, September, 1932. Of the 28,000,000 bbl. a year or more which is to be carried in the Iraq pipeline when completed in 1935, France expects at least 14,000,000 bbl. a year, thus covering over half of its requirements.

Other auxiliary resources furnish little hope at the moment for the nearby future. The situation with respect to alcohol has been discussed; the development of domestic production in Alsace is limited by the geology of the region and the high costs; benzol, both from the standpoint of costs and of available quantity taking into consideration the inflexible demand for gas and coke, has little to contribute; hydrogenation of oil or coal still contains many unknown factors; production from Morocco and Madagascar has been an immense disappointment to date.

In the meantime large sums of money are being invested in the Iraq pipeline and in the refinery construction program. Recently it was estimated that 1,000,000,000 francs have already been put into that portion of the refinery program which has been carried out so far. The costs of financing are relatively high, since the government is not guaranteeing the issues of the Compagnie Française de Petroles, which is engaged in pipeline construction, refinery and transportation operations, although it owns a substantial portion of the company's stock. Recently the C.F.P. jointly with its refining subsidiary, the Compagnie Française de Raffinage, floated a bond issue of 150,000,000 francs paying 6 percent, without guarantee of the government, at a discount. Further new issues will be urgently needed as the construction progresses, and will have to be thrown on the market irrespective of the condition of the Bourse.

To a large extent, the dependence on foreign sources of supply of petroleum will have been simply transferred from within the country to Iraq. So long as times remain normal, there is no reason to believe that there will be any serious difficulty in working out a routine for the supply of crude oil to France; but under conditions of extreme strain, such as the critical point of the last war, which is precisely when the whole national oil program will be called upon to justify itself, the supply of crude may prove to be the weak link in the chain.

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Transportation Committee on Truck Regulation

REPORT of the National Transportation Committee which has been engaged for the past several months in studying the problems of the railways of the United States was published February 15. One section of the report is devoted to the subject of the regulation of highway transportation. The committee takes the position that automotive transportation should be put under "such regulation as is necessary for public protection" and bear its fair burden of taxation, but that "neither tax nor regulation should be applied for any purpose of handicapping the march of progress for the benefit of the railroads."

"Automotive transportation is an advance in the march of progress," says the report. "It is here to stay. We cannot invent restrictions for the benefit of the railroads. We can only apply such regulation and assess such taxes as would be necessary if there were no railroads and let the effect be what it may."

Referring to the proposal of the Interstate Commerce Commission for placing interstate buses and trucks under federal regulation the committee says:

"The committee believes that the situation requires general federal jurisdiction of motor transport. It recognizes that no such intricacy of regulations as characterizes railroad supervision can ever be extended to this field, but it is convinced that a broad measure of federal and uniform state control can and should be applied."

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PURE Oil Company and Sun Oil Company are building an 80-mile pipeline from Toledo, Ohio, to Detroit, Michigan. The pipeline is designed to carry 12,000,000 gallons of gasoline monthly.

Compulsory Use of Alcohol in Motor Fuel

A Growing Tendency Toward Laws Requiring the Use of Alcohol in Motor Fuel With the Main Features and Cost of Such Adulteration Discussed by Dr. Georg Kaltenbrunner.

UNIVERSAL employment of internal combustion engines throughout the world has brought about a tremendous increase in the demand for fuel for these engines. The fuel used hitherto has almost exclusively been gasoline. For a great number of years, however, experiments have been conducted with a view to finding other kinds of fuel for these engines which might be used instead of gasoline. These experiments have been carried out especially in those countries which have no mineral oil production of their own, or an insufficient one. The countries in question are, therefore, to a very great extent dependent on the importation of this fuel, though they have been endeavoring to make themselves independent of this importation. This applies to the principal European countries, in which, with the exception of Poland, Roumania, and Russia, mineral oil is not found at all or only in very small quantities.

The substitutes used hitherto for gasoline for light combustion engines have been principally benzoline, different by-products of coal tar, and alcohol. The endeavors towards independence of gasoline have been especially intensified in those countries in which substitutes were available in sufficient quantities or could be produced from indigenous raw materials. This was most often the case with alcohol. The principal raw-materials used for the production of alcohol are, as is known, molasses, potatoes, grain, and sulphite pulp waste liquor of the cellulose production. In a number of European and also non-European countries, which have an over-production of the above-mentioned raw materials or a surplus supply of alcohol, the demand has been put forward for some time past by interested parties that the government should make provisions to secure use of alcohol as a motor fuel, so as thereby to make the countries in question independent of importation of motor fuels, and at the same time to create a market for domestic products.

Petroleum companies in Europe, South America and elsewhere are compelled by law to add stated quantities of alcohol to motor fuel and some agitation in this direction is noticeable in the United States. Whatever the value of such laws to the national economy in various other countries, they have proved an obstacle to the petroleum companies and the feeling is prevalent in the United States that the enactment of any similar legislation would be most harmful to the already overburdened oil industry. This is the first of a series of two articles in which Dr. Georg Kaltenbrunner discusses recent changes and modifications in the laws pertaining to mixtures of alcohol and motor fuel in all the important consuming countries of the world.

It would be beyond the scope of this article to give a detailed account of the experiments and results obtained in regard to the suitability of alcohol as a motor fuel. It will suffice to mention that at first alcohol with a pure alcohol content of 94–96 percent was used for mixing with gasoline, and that to avoid a demixture benzoline was added as homogenizing means. Experience showed, however, that for mixing with gasoline almost completely anhydrated alcohol with an alcohol content of 99.5 percent was much better suited. Since various processes have been developed by which it is possible to produce anhydrous alcohol in a relatively simple and inexpensive way, alcohol with a pure alcohol content of 99.5 percent is practically always used for mixing with gasoline. The percentage of alcohol of this mixture is not uniform, the best results having been obtained with mixtures with an alcohol content of 20–30 percent.

While it is asserted that alcohol mixed in certain proportions with gasoline (gasoline by itself or combined with benzole or other substances) furnishes a suitable fuel for internal combustion engines, the use of alcohol can, however, only become general if the price of the resulting gasoline mixture is a competitive one. As long as this is not the case, the use of appreciable quantities of alcohol as motor fuel is only possible by means of state regulations.

In a certain number of countries, especially those in which the agricultural classes have a powerful political influence, such regulations have in fact already been put into force. The following article gives an account of the extent alcohol is used at present as a motor fuel, and of the laws in force with regard to its compulsory employment in the different European and non-European countries.

Germany

IN GERMANY, there is a state monopoly of alcohol (Branntweinmonopol). The entire supply of alcohol, regardless of the purposes it is intended for, must be delivered to the administration controlling the monopoly, who subsequently market it. By far the greater part of the alcohol is produced in agricultural distilleries, where it is manufactured from the potatoes, and, to a smaller extent, the grain cultivated there. In the industrial distilleries and yeast factories alcohol is produced from molasses. The sulphite waste liquor of the cellulose production is likewise used as a raw material, the quantity of alcohol produced therefrom totalling 6,500,000 to 7,800,000 gal. in the last few years.

For some 10 years the German administration controlling the monopoly has been producing a motor fuel, which is a mixture of gasoline and alcohol. Up to the year 1930 the use of alcohol as a motor fuel was not compulsory, the use of either gasoline or alcohol, which was sold by the so-called "Reichskraftsprit-Stelle" being optional. On April 15, 1930 a law was enacted as a result of pressure brought to bear by the agricultural classes making it compulsory for all importers and producers of motor fuels to buy a certain definite percentage of alcohol, fixed by law, from the State Monopoly Administration (Reichsmonopoerwaltung).

The selling-price is likewise fixed by the German government. For the first year 2.5 percent of anhydrous alcohol with a pure alcohol content of 99.6 percent and a selling price of RM. 3.08 per gallon was stipulated by law.

By the law of October 1, 1932 it has been made compulsory to buy alcohol to the extent of 10 percent of the quantity of gasoline, the selling price having been fixed at RM. 1.92 per gallon of anhydrous alcohol.

The motor fuel purchased must be mixed with mineral oils in such a way that the mixture contains a minimum alcohol content of 20 percent and a maximum alcohol content of 30 percent.

Since it is compulsory for producers and importers of motor fuel to buy alcohol to the extent of 10 percent of any quantity of gasoline, and the mixing with alcohol must be carried out to the extent of 20 percent of this quantity, unmixed gasoline, as well as mixed gasoline (alcohol-mixtures) are used as motor fuels in Germany. The present price of anhydrous alcohol at RM. 1.92 per gallon is considerably higher than the price of gasoline. The increase in the price of motor fuel resulting from admixture of alcohol, is distributed over the total quantity of motor fuel, regardless of its being mixed or unmixed with alcohol.

It is interesting to note, moreover, that when the compulsory admixture of alcohol became law in 1930, the petroleum companies did not raise the price of motor fuels above that previously obtaining for gasoline.

France

IN FRANCE there is also a state-controlled monopoly of the so-called industrial alcohol, which is produced in industrial distilleries from beets, molasses and (to a small extent) from flour-like substances.

France was one of the first European countries, which endeavored by means of government regulations and the compulsory use of alcohol to create a "carburant national" (national motor fuel), and thereby to make herself at any rate partly independent of imports. A law enacted on March 1, 1923 made it compulsory for importers of gasoline to mix alcohol with gasoline to the extent of 10 percent of the quantity of gasoline, and to use this alcohol exclusively for the production of motor fuels. Since this kind of alcohol was considerably higher in price than gasoline, a "provisional surtax" of Fr. 0.192 per gallon of gasoline was imposed. This compensatory tax made it possible on the one hand to reduce the price of motor alcohol below its production cost, and on the other hand to put the gasoline-alcohol mixture and the pure gasoline on a competitive basis. The price of alcohol sold for motor fuel purposes was originally fixed at Fr. 6.92, but subsequently increased to Fr. 9.23.

The quantity of industrial alcohol then available in France was, however, not sufficient to make it possible to buy alcohol to the extent of 10 percent of any imported quantity of gasoline. Actually gasoline-alcohol mixture was bought only by a number of large consumers, above all by the Paris omnibus companies.

The law of June 4, 1931 made it compulsory for importers of gasoline to mix, according to the directions of the government, anhydrous alcohol with gasoline at a minimum rate of 25 percent and a maximum rate of 35 percent, the alcohol for tourist traffic purposes (essence du tourisme) and alcohol not intended for motor fuel purposes being exempted under this law. The mixture has without exception to bear the name "heavy fuel" (carburant poids lourd). The compensatory tax was fixed at Fr. 0.4 per gallon of gasoline, and the selling price of anhydrous alcohol, which was considerably lower than its cost price, at Fr. 4.42 per gallon. This price corresponds approximately to the wholesale price of "heavy gasoline." In consequence of this law an annual consumption of 39,000,000 gal. of alcohol is hoped for. Apparently, however, these hopes will not be realized, since a bill was introduced in the French Chamber in July 1932 according to which the public omnibus companies and the overland transport companies, which are licensed or subsidized by the state, as well as the "boroughs and parishes" are to use exclusively a motor fuel with an alcohol content of 20 percent. The reason for bringing in this bill is stated to be the indifference to, and in some cases even, the opposition on the part of consumers against the use of the gasoline-alcohol mixture, despite efforts on the part of petroleum companies to increase its sale.

Italy, following her general economic policy, endeavors to make herself independent, to some extent at least, of the import of motor fuel from abroad, and consequently uses alcohol for this purpose.

Italy

ONE OF THE reasons for Italy's endeavors in this direction are her large surplus quantities of wine, which are partly to be used for the production of alcohol. Between the years 1926 and 1932 a number of laws and by-laws were issued by which the mixing of alcohol with gasoline and other motor fuels was decreed. Pursuant to the law, which is in force at present, viz. the law of June 18, 1931, and the by-laws of December 9, 1931 and January 24, 1932 the producers and importers of alcohol are obliged to place at the disposal of importers of gasoline and producers of indigenous motor fuels, 25 percent of the quantity of alcohol produced or imported by them. The importers of gasoline are compelled to buy a certain quantity of anhydrous alcohol. The percentage of alcohol to be bought in proportion to the imported quantities of alcohol is fixed by the government in the by-laws.

The mixing of alcohol with gasoline has to be carried out at the rate of 20 parts of alcohol to 80 parts of gasoline. At present the quantity of anhydrous alcohol to be bought in proportion to gasoline, amounts to approximately one tenth, the price of anhydrous alcohol being lire 5.57 per gallon. The cost price of alcohol is at present considerably higher than this. It is estimated that the consumption of alcohol for motor fuel purposes amounted to approximately 2,600,000 gallons in the year 1932, while imports of gasoline reached approximately 13,000,000,000 gal. in the last few years. Hence, it becomes apparent that in Italy, as well as in Germany only a small proportion of gasoline is mixed with alcohol, by far the greater part of gasoline being used unmixed as motor fuel. Since the present production of alcohol in Italy is not sufficient in view of the greatly increased consumption of alcohol in Italy, the Italian government has taken steps to bring about an increased production of alcohol. A new raw-material, the so-called Indian fig *opuntia ficus indica*, which grows wild in sections of southern Italy, but can be cultivated at no great cost, is mainly to be used for its production.

(This is the first of a series of two articles on the use of alcohol in motor fuel in all countries of the world. The second of Mr. Kaltenbrunner's articles covering regulations in other European and South American countries will appear in the April issue. —EDITOR)

Foreign Oil Legion

GORDON HUNT MICHLER, managing director, Société Anonyme L'Economique, Paris, has been made a chevalier of the Legion of Honor. Before he took his present position with Jersey Standard interests in France, Mr. Michler was head of the Fuel Oil Department at 26 Broadway, New York.

Gordon Hunt Michler

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J. L. KIRKLAND, chief accountant of the Shell Group for Australasia, has retired owing to ill-health.

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G. CESSFORD, Anglo-Persian Oil Company's chemical staff, has been transferred from England to Persia.

▼

H. M. MACINTYRE, pipeline superintendent, Anglo-Persian Oil Company, has retired after twenty-two years in the company's service.

JOHN A. MOWINCKEL, chairman, Standard-Franco-Americaine, Paris, is visiting the United States during February and part of March. While in New York, Mr. Mowinckel stayed at the Waldorf. He is expected to return to France in March.

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R. R. TWEED, director, British Controlled Oil fields, and A. G. Holmes, chief engineer, are on a tour of inspection of the company's properties in Venezuela and Trinidad.

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SIR A. G. STERN, director of Steaua Romana (British) and vice president of Steaua Romana S. A., left England early in February for Cannes.

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JAMES KEWLEY, chief chemist, Asiatic Petroleum Company, recently flew from Paris to London in one and a half hours.

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GUY WELLMAN, head of the legal division of the Standard Oil Company of New Jersey has been visiting Europe.

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ALFREDO CASTELLETI and Alberto Velano, engineers representing the Italian government, who have been studying the oil industry in Mexico arrived in New York during February.

B. H. MARKHAM, director, American Petroleum Industries Committee, addressed the Ohio Petroleum Marketers Association at Columbus, Ohio, on February 16. Mr. Markham spoke on the problems resulting from the tendency toward excessive taxation of the petroleum industry in the United States.

B. H. Markham

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R. R. BEAUMONT, chairman, Trinidad Leaseholds, Ltd., London, has been inspecting the company's refining property in Trinidad, where extensions have recently been made. These additions were described in the January 1933, issue of WORLD PETROLEUM.

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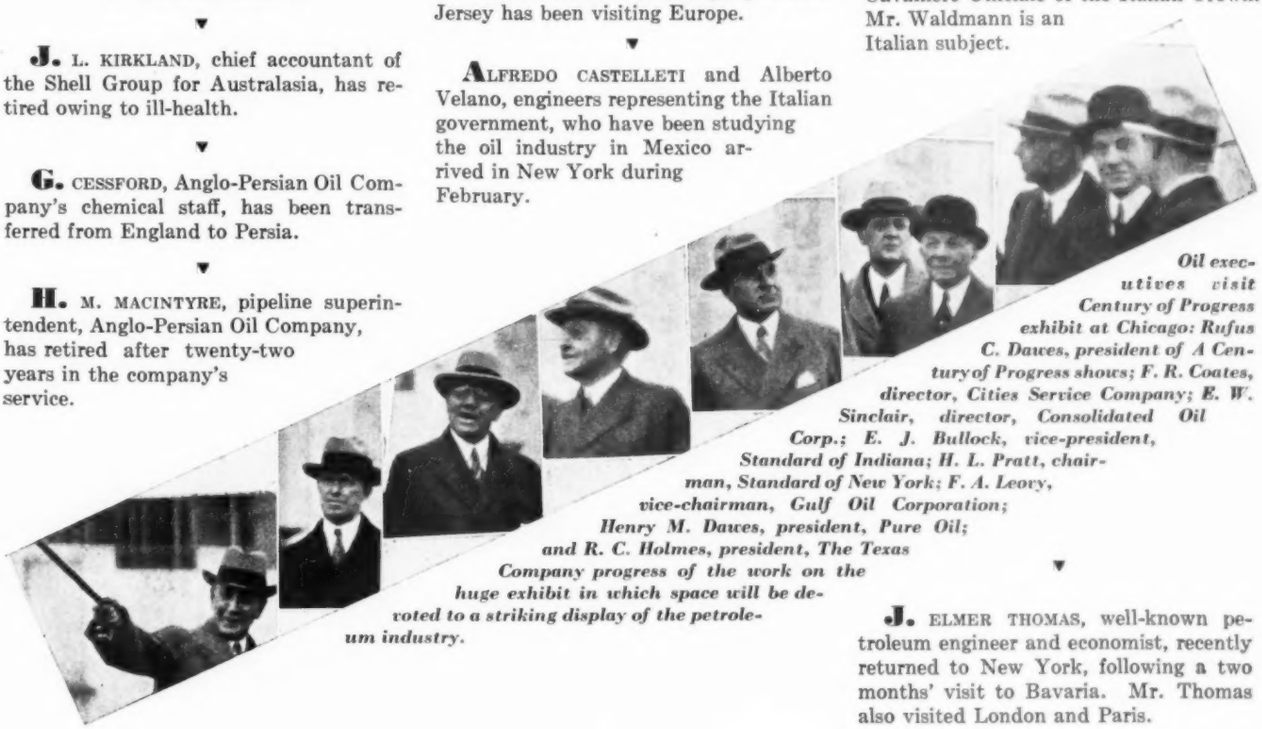
ADALBERT WALDMANN, general manager, Shell Mineral Oil Company at Budapest, has received the Order of the Cavalliere Ufficiale of the Italian Crown. Mr. Waldmann is an Italian subject.



Oil executives visit Century of Progress exhibit at Chicago: Rufus C. Dawes, president of A Century of Progress shows; F. R. Coates, director, Cities Service Company; E. W. Sinclair, director, Consolidated Oil Corp.; E. J. Bullock, vice-president, Standard of Indiana; H. L. Pratt, chairman, Standard of New York; F. A. Leavy, vice-chairman, Gulf Oil Corporation; Henry M. Dawes, president, Pure Oil; and R. C. Holmes, president, The Texas Company progress of the work on the huge exhibit in which space will be devoted to a striking display of the petroleum industry.

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J. ELMER THOMAS, well-known petroleum engineer and economist, recently returned to New York, following a two months' visit to Bavaria. Mr. Thomas also visited London and Paris.

Safeguarding Boilers by Water Treatment

A Difficult Feed Water Problem Has Been Satisfactorily Solved at the Coffeyville Plant of the Sinclair Refining Company by Rational Water Treatment.

THE WATER softening installation at the Coffeyville, Kansas refinery of the Sinclair Refining Company is an excellent example of modern practice which satisfactorily meets conditions that are more than ordinarily severe.

The boiler plant in a refinery forms a department which has to meet the needs for process steam and power, and as long as all demands are promptly met, it might appear to have a function which is of a secondary nature. This viewpoint is not correct; the proper functioning of the power plant is of primary importance. Although for anyone not connected with boiler operation it may seem a simple matter to insure an adequate supply of steam and power without interruption, this problem in many instances is only solved by ceaseless vigilance on the part of the operators. In matters of modernization and expansion, the boiler plant often does not receive the same consideration given to other departments of the refinery, so that frequently the boiler plant is operating at a rate for which it was never designed.

Under such conditions, it is essential that the auxiliary equipment for the boiler house be absolutely reliable, and the feed water treating system is one of the most important items.

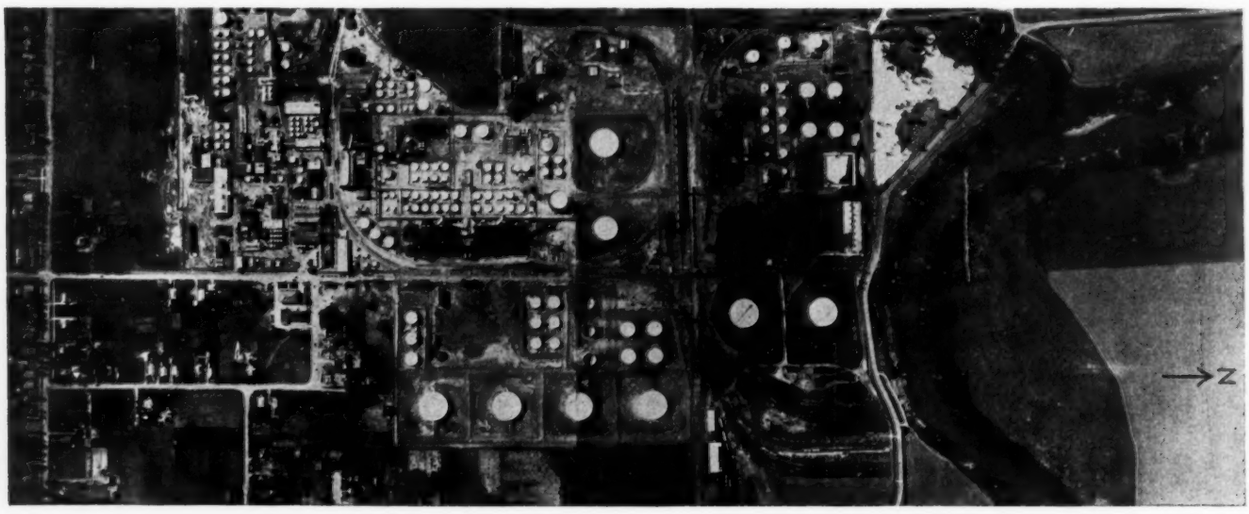
Frequently the source of supply for feed water consists of surface water, of which the mineral content is subject to strong variation, as a result of atmospheric conditions, and which is further contaminated by dissolved or suspended organic matter. It is the general practice to use the water first in process condensers, where it is subject to leakage of oil, so that in most instances a rational treatment is necessary to produce suitable feed water.

Preparing a suitable feed water is not a matter of simply removing scale-forming material, but must also take into account the constant threat to the boilers from corrosion and embrittlement, and the steaming properties of the boiler water, all of which should be taken care of in a simple manner with a minimum consumption of chemicals.

The boiler equipment of the Coffeyville plant consists of five 588 h.p. longitudinal drum boilers, operating at 190 lbs. pressure and 200 percent rating, to which one 615 h.p. cross drum boiler, designed for 450 lbs. has been added, which at present operates at 190 lbs. and from 200 percent to 300 percent rating. The supply from the Verdigris River averages a hardness of 15.5 grains and is highly turbid at times. During certain periods of the year, especially after prolonged dry periods, the river is stagnant and local industrial and sanitary discharges result in excessive contamination.

The presence of a large amount of bicarbonates and a high chloride concentration called for a hot process treatment. The Neckar Process was selected on account of its simplicity, flexibility, minimum chemical requirements and apparent advantages for such conditions. That the reasoning was sound has been demonstrated by actual operating results.

The system has a rated capacity of 317,000 lbs. of raw water per hour. Referring to the diagram it will be seen that the main unit consists of a treatment tank 25 ft. in diameter with an effective shell height of 26 ft. The bottom has a cone shape to facilitate sludge removal and the shell is extended to form a built-in compartment underneath, in which the chemical feed equipment is located, and which is also used for storage of chemicals.



Aerial view of Sinclair's Coffeyville refinery where the installation of a water treating plant assures a supply of feed water from the Verdigris River, shown in the illustration, that will not harm the boilers.

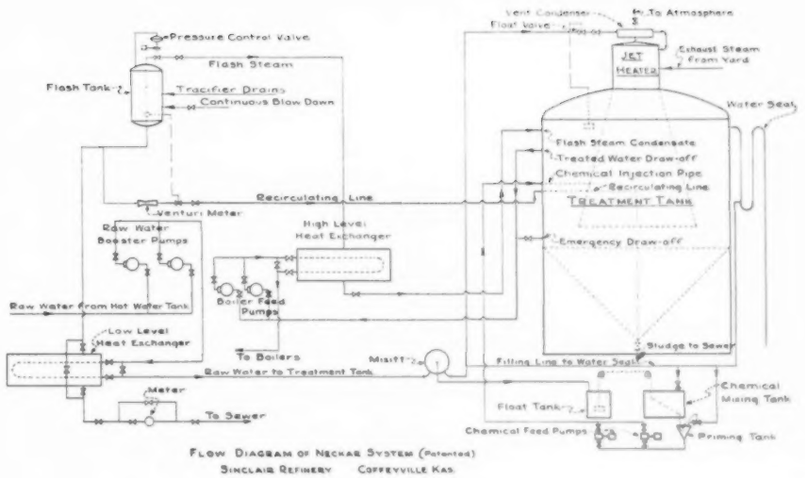
A jet heater is located on top of the treatment tank and is equipped with a vent condenser for removal of non-condensable gases, without losing a large amount of steam. The raw water is taken from a hot water tank, and by means of booster pumps, is led through a low level heat exchanger and a "Mixitt" apparatus to the heater, after first passing through the vent condenser.

The treated water is delivered from the treatment tank directly to the feed pumps and then pumped through a high level heat exchanger to the boilers.

The boilers are equipped with continuous blow-down connections, consisting of an orifice and a special regulating valve for each boiler, arranged parallel to one another. The water thus withdrawn from the boilers is collected in a header which terminates in a flash tank. Tracifier drains are also piped to this flash tank. The steam end of the flash tank discharges to the high level heat exchanger. The flashed boiler water is split into two flows: a continuous blow-down to the sewer through a low level heat exchanger, of which the rate is measured by a displacement meter after being cooled in the exchanger; and the balance of the flashed water is returned to the treatment tank after first passing through the venturi tube of a meter.

The chemical proportioning and feeding equipment, as mentioned before, is located underneath the treatment tank. The basic element is the "Mixitt" apparatus in the raw water line, which supplies a small continuous flow, proportional to the rate of flow of the raw water. The water delivered by this apparatus is discharged into a float tank, thereby raising a float at a proportionate rate. This float is linked to a decantation pipe in the chemical tank, which contains a lime soda mixture, kept uniform by means of a motor driven agitator. The solution, discharged by the decantation pipe, is collected in a priming tank, whence it is taken by the chemical feed pump (triplex, ball valves, motor driven) to the treatment tank. It will be noted that there are no small orifices through which the chemicals must pass.

Recirculation of boiler water to the treatment tank is a special feature of the process and has many advantages. Temperature of the flashed water being higher than temperature in the treatment tank, the recirculation sets up a boiling condition in the central part of the tank. This boiling drives off the air and carbon dioxide, originally in solution in the raw water, so that a feed water with zero oxygen is produced. It further initiates the treating process by rendering part of the raw water hardness insoluble In addition to this heat treatment, there are chemical reactions. Boiler water that has been treated with lime and soda will contain sodium carbonate and caustic soda, concentration of which will build up in boilers and interfere with production of steam of proper quality, unless provisions are made for control of these concentrations by means of withdrawal of boiler water. Sodium carbonate and caustic soda, introduced into the treatment tank by the recirculating water, participate in the softening process, thereby reducing the demand for chemicals to be supplied to the system.



FLOW DIAGRAM OF NECHAR SYSTEM (Patented)
SINCLAIR REFINERY COFFEYVILLE KAS.

The lime soda mixture fed to the system is introduced in the zone in which the recirculating water is returned. Since injection of the recirculation water is accompanied by flashing, the water in the inner part of the treatment tank is sufficiently agitated to insure a complete mixing of the lime soda solution with the water to be treated.

The effluent from the treatment tank still contains about 10 p.p.m. (0.6 grains) of calcium and magnesium salts, constituting the residual hardness. This hardness is precipitated in the boilers and is present in the recirculating water in the form of a sludge. Particles, making up the sludge, upon being brought into contact with the water under treatment, have a beneficial effect by acting as nuclei in the precipitation of the hardness, thus contributing to the formation of a favorable floc, and under normal conditions, permit complete clarification of the treated water without the use of a coagulant or filters.

The great advantage of recirculation, however, lies in the fact that a high excess alkalinity can be maintained in the treatment tank, without resulting in a high alkalinity in the boiler water. This results in a low residual hardness, and removal of hardness is the primary object of water treatment.

The treatment tank provides for two hours' retention time and normally the settling of suspended matter is complete, even when the raw water is turbid, and a treated water is produced of both better quality and appearance than was the case when the water was treated with a conventional hot lime soda process, followed by filtering.

There are occasions, however, when the character of the suspended particles in the raw water is such that no complete settling can be obtained, and at such times not even filtering is satisfactory. A coagulant is then used temporarily with satisfactory results.

Recirculation of boiler water does not complicate the operation of the system; in fact, it simplifies the water treatment. The rate of recirculation does not have to be kept at a definite value, as long as the minimum is maintained to provide adequate excess alkalinity in the treated water. The blow-down to the sewer is a more important factor and is regulated to maintain a sufficient sulphate concentration in the boiler water for protection against embrittlement of the boiler material. Due to the high excess alkalinity, the system is non-sensitive, permitting easy periodic correction of the chemical feed without running into adverse conditions.

The operation of the system does not call for mechanical adjustments. The blow-down to the sewer and the chemical charges only have to be regulated in accordance with fluctuations in the raw water composition.

UNITED STATES

	Daily Production (bbl.)	Daily Runs to Stills (bbl.)	Gasoline Stocks (bbl.)	Imports for Week (bbl.)	California Shipm. East for Week (bbl.)
Week Ending Jan. 28	2,008,700	2,185,000	53,211,000	671,000	383,000
	294,100*				
Week Ending Feb. 4	2,028,250	2,090,000	54,287,000	1,027,000	516,000
	295,100*				
Week Ending Feb. 11	2,025,000	2,130,000	56,150,000	1,010,000	160,000
	300,500				
Week Ending Feb. 18	2,082,650	2,160,000	56,560,000	856,000	440,000
	300,050				

Underlined figures indicate improvement in statistical position—decrease in production, runs to stills, gasoline stocks or imports.
*Production of the Rusk-Gregg field, East Texas.

Exports at Record Lows

DURING December, 1932, the sixth month after imposition of a tariff on crude oil and its products, total imports increased noticeably over the preceding month, amounting to 3,910,000 bbl., as compared with 3,173,000 bbl. imported in November, and a monthly average of 9,090,000 bbl. for the first six duty-free months of 1932. Motor fuel imports continued nominal in December reaching but 56,000 bbl., as compared with 121,000 bbl. imported in November, and a monthly average of 1,272,000 bbl. for the first six duty-free months of 1932.

Petroleum exports continued their uninterrupted decline for the fourth consecutive month dropping to 6,775,000 bbl. during December, 1932, as compared with 7,014,000 bbl. exported in the preceding month, while motor fuel exports established in December a low record figure of 1,953,000 bbl., as compared with 2,387,000 bbl. exported in November. Apparently the refineries constructed recently in Europe have reached a motor fuel producing capacity which makes some countries almost self-dependent during the slack winter season, and hence it may be anticipated that in coming years the United States will export very little motor fuel during winter months, but will increase such exports during the summer seasons, commensurate with the business recovery and also subject to the additional refinery construction in Europe.

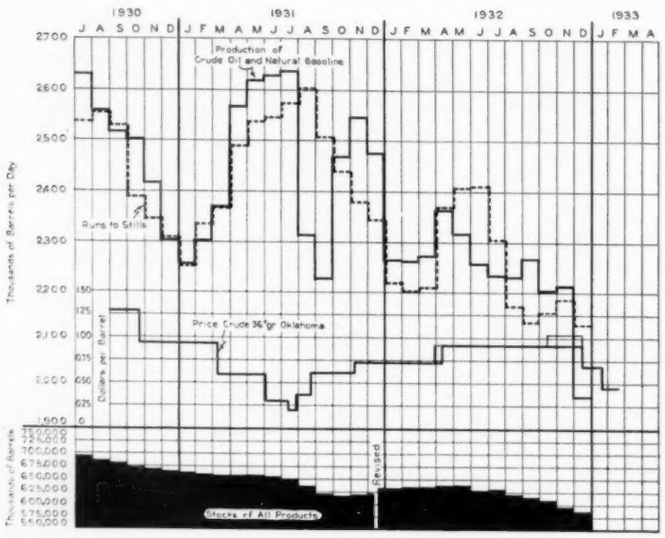
The post-tariff trade readjustment favorable to domestic producers, however, was further extended into December. Reduction in motor fuel exports of 1,587,000 bbl. was only partially counterbalanced by the reduction of motor imports by 1,216,000 bbl., while the imports of all other petroleum products contracted by 3,964,000 bbl. during December, and their exports decreased by only 1,240,000 bbl., leaving a favorable balance of 2,353,000 bbl., or 75,800 bbl. per day, which was taken out of domestic products and not from the imports, which would have been the case if the oil tariff had not been in force.

Motor Fuel Supply—Demand

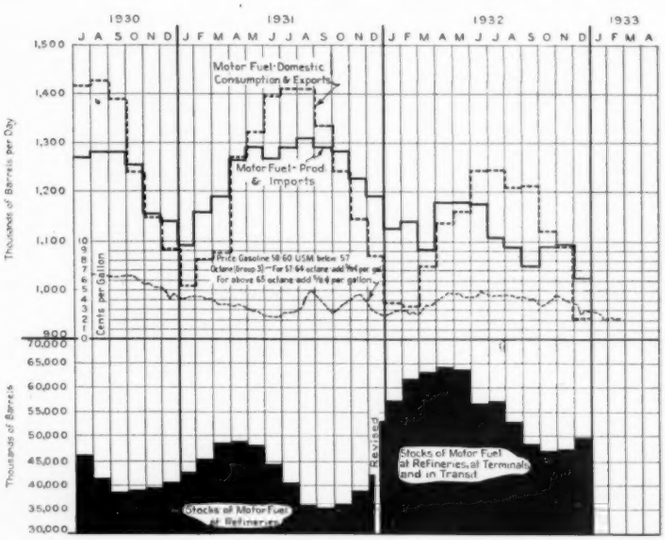
INDICATED domestic demand for motor fuel during December, 1932, averaged 877,000 bbl. per day, a decrease of 13.2 percent under the daily average of the preceding month, and 108,000 bbl. per day under the domestic motor fuel consumption in December of 1931, a decline of 11 percent. For the whole year, 1932, the domestic motor fuel consumption reached 373,770,000 bbl., or an average of 1,020,000 bbl. per day, as compared with the peak domestic consumption in United States of 403,418,000 bbl. in 1931, a daily average of 1,105,000 bbl., and as compared with the consumption of 394,800,000 bbl. in 1930, or a daily average of 1,082,000 bbl. Therefore the domestic motor fuel consumption in United States in 1932 decreased by 7.69 percent if compared with the preceding year, and by 5.73 percent if compared with 1930.

Exports of motor fuel averaged 63,000 bbl. per day in December, 1932, a decrease

U. S. production, runs to stills and price of crude oil in relation to stocks of all petroleum products.


1930
1931
1932
1933
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A
Production of Crude Oil and Natural Gasoline
Runs to Stills
Price Crude 36°gr Oklahoma
Thousands of Barrels per Day
Dollars per Barrel
Stocks of All Products
Revised

U. S. consumption and exports, production, imports and prices of motor fuel in relation to motor fuel stocks.


1930
1931
1932
1933
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A
Motor Fuel-Domestic Consumption & Exports
Motor Fuel-Prod & Imports
Cents per Gallon
Thousands of Barrels per Day
Thousands of Barrels
Stocks of Motor Fuel at Refineries, at Terminals and in Transit
Stocks all Motor Fuel at Refineries
Revised

of 21.2 percent under the preceding month, and 27.4 percent under December of 1931. For the whole year, 1932, the motor fuel exports reached 35,434,000 bbl., as compared with 45,716,000 bbl. exported in 1931, and 65,575,000 bbl. exported in 1930. Therefore the motor fuel exports from United States in 1932 declined by 22.4 percent if compared with the preceding year, and by 45.9 percent if compared with 1930.

Total demand for motor fuel in December, 1932, decreased by 12.3 percent as compared with the same month of 1931; while for the whole year, 1932, it decreased by 8.91 percent if compared with 1931 demand, and by 11.1 percent if compared with 1930 demand.

On January 1, 1933, the motor fuel stocks at refineries, terminals and in transit amounted to 49,671,000 bbl., an increase of 2,519,000 bbl. as compared with stocks on hand on December 1, 1932, indicating that during December motor fuel supply exceeded demand by 81,200 bbl. per day.

Refinery Runs Excessive

WITH THE domestic and export motor fuel demand declining sharply in the last two months, dropping to 940,000 bbl. per day in December, 1932, crude oil runs to stills not only continued unchanged but showed recently, appreciable increases, as was the case in the two weeks ending January 21 and 28, when the runs averaged 2,187,500 bbl. per day (Bureau of Mines) probably resulting in an addition to motor fuel stocks of at least 75,000 bbl. per day. Under current conditions runs to stills should not exceed 2,000,000 bbl. per day, while a reduction to 1,900,000 bbl. per day during February and March would have been very desirable, and would have stiffened markedly the weak refinery markets.

Prices Steady at Lower Levels

AFTER THE two sinking spells in crude oil and motor fuel prices in mid-December, 1932, and mid-January, 1933, market quotations throughout the United States remained practically stationary at the low figures reached.

Seasonally small motor fuel demand and particularly unfavorable motoring weather prevented any recoveries in refinery gasoline quotations, while rather hectic investigations of proration enforcement in Texas and in Oklahoma efficiently blocked any anticipated crude oil price advance. At the same time, among the major companies, one group was waiting upon the rise in the prices of refinery products before advancing crude, while the opposing group was anticipating higher crude oil prices before advancing refinery quotations, the divergent policies having originated at the time of the October 15, 1932, crude oil price advance which was not met by all major purchasers.

The price of motor fuel in retail markets remained relatively steady during February. In New York City a price war in the third grade gasoline flared up in the beginning of the month, resulting in service stations selling that grade at 9.1 cents a gallon, including state and federal taxes. Early in February the Rio Grande Oil Company (Consolidated) reduced price of gasoline in Southern California one cent a gallon on regular grades and two cents a gallon on third grade. On February 14 all the major oil companies met the reductions initiated by the Rio Grande Oil Company.

Refinery gasoline quotations on February 15 were unchanged from a month ago: —2⅛–2⅜ cents per gallon for 58–60 U. S. M., 57 and below octane rating, in Group 3, Oklahoma market; 57 to 64 octane rating, U. S. M., commanded 2⅜–2⅝ cents per gallon; and 65 and above octane rating, U. S. M., was quoted at 2⅝–2⅞ cents per gallon. On the East Coast, at Bayonne, the U. S. M. grade, 57 to 64 octane rating, was quoted at 5½ cents per gallon. Gulf Coast prices for export on February 15 were 3⅝ cents per gallon for 58–60 U. S. M. grade, unchanged from the preceding month.

Natural gasolines declined slightly lower, as compared with January prices, and were quoted on February 15 at 2 cents per gallon for grade 26–70 in Oklahoma and North Texas, and at 2¼–2⅜ cents per gallon in North Louisiana.

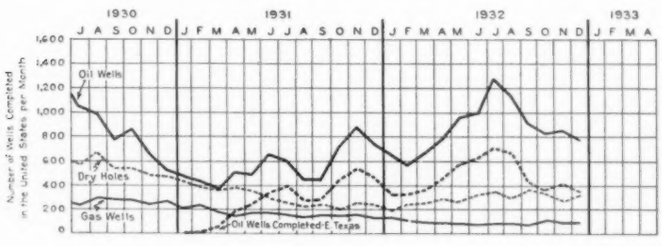
Kerosene prices extended their January declines during the past month, dropping half-a-cent a gallon, grade 41–43 w.w. declining to 2¾–3 cents per gallon in Group 3, Oklahoma market, and to 5½–6 cents per gallon on the East Coast, at Bayonne. Gulf Coast prices for export remained unchanged at 4¼–4⅜ cents per gallon for 41–43 p.w. grade.

Crude oil prices posted by major purchasers at the close of January remained unchanged during the past month. The time irregularity in the January price reductions resulted in considerable variations in crude oil prices in the same fields which have not been corrected as yet. The Conroe field, Texas Gulf, crude oil is thus variously posted at 64 and 74 cents per barrel for top grade; the Gray County, Texas Panhandle, crude oil is quoted at 40, 46 and 48 cents per barrel for 40 gravity and above; the Smackover, Arkansas, crude oil is bringing 20, 25 and 30 cents per barrel, flat; while the Darst Creek, Southwest Texas, crude oil is quoted at 35 and 40 cents per barrel, flat.

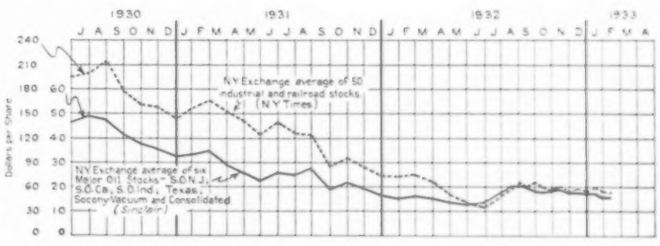
Some very slight firmness in crude oil markets was noticeable at the close of February, influenced by possibly reduced production of illegal crude oil due to unfavorable publicity resulting from the various investigations now under way, and also due to the formation of protective pro-proration "vigilante" groups of producers and royalty owners in the East Texas field.

On February 8 the directors of the American Petroleum Institute adopted for the oil industry a set of principles which it

U. S. drilling; comparison of oil wells, dry holes, and gas wells.



Six major oil stocks in relation to 50 industrial stocks on the New York Stock Exchange.



is believed should tend to bring the production of crude oil in line with market demand, and more particularly should eliminate illicit production. After stating the fundamentals of proration, as expressed on many occasions previously, the directors said:

In order for this program to succeed it is absolutely necessary that the lawful orders of the state commission be rigidly enforced and every person engaged in the industry should assist the commissions in enforcing such orders, and should avoid any and all acts which would directly or indirectly circumvent or tend to defeat such orders. If the states adequately enforce their conservation laws, the effect should be the marketing of all oil produced at the competitive prices, which from time to time are publicly posted. In addition to this, the important subject of the gasoline tax and gasoline-tax evasion cannot be omitted from the picture. The gasoline tax has reached a point where the motor vehicle, because of this and other taxes, is now paying approximately 10 percent of the total tax burden of the United States, including federal, state and local subdivisions, and on an average more than 40 percent of the revenues of the states. This burden has already reduced the consumption of gasoline and purchase of new cars. The number of cars in use is now at least 3,000,000 less than three years ago. Gasoline which escapes the tax destroys the competitive price structure determined by economic conditions and this in turn reacts on the conservation program in the same manner as the surreptitious production of crude oil.

J. B. Aug. Kessler, Joint Managing Director of the Royal Dutch-Shell group, Harry F. Sinclair, Chairman of the Executive Committee of the Consolidated Oil Corporation and R. C. Holmes, President of the Texas Company issued separate statements in support of the American Petroleum Institute announcement stressing the vital importance to every one in the oil industry of absolute good faith and full immediate cooperation with the state conservation commissions.

Investigations of Proration Enforcement

Texas

CONSIDERABLE reduction in illegal production from the East Texas field has been reported during the first half of February, due principally to low prices for illicit crude oil, under 25 cents per barrel, and also because of the more active enforcement of proration by the new Resident Commissioner, Colonel E. O. Thompson, of the Texas Railroad Commission. Similarly the formation of volunteer "vigilante" groups by the producers and land owners, who report all excesses of production to the Texas Railroad Commission, has been a constructive movement, more particularly because, though peaceful at this time, the "vigilante" groups will probably not hesitate in the future to use force, if present means will not bring the desired results.

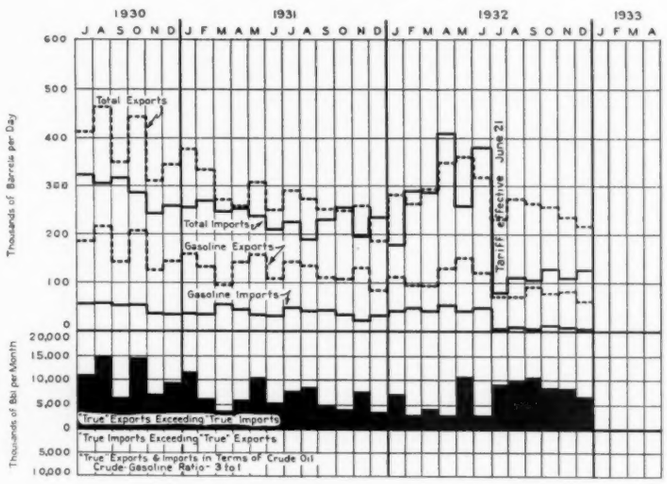
Some 50 petitions have been heard during the last week of January before the Federal Three-Judge Court in Houston opposing the most recent orders of the Texas Railroad Commission prorating the East Texas field on the basis of bottom-hole pressures, and attacking as well the market demand statute claiming it to be, in practice, a price fixing act. The decision of the Federal Court is expected early in March. It is anticipated that the Court will condemn the latest proration rules as confiscatory to the better leases, and therefore the Texas Railroad Commission is preparing a new set of proration regulations. Attorneys for the plaintiffs did not request injunctions against the Texas Railroad Commission at the Houston hearing in order to expedite the final decision.

On the North end of the East Texas field, in the D. Sanchez Survey a number of operators producing within the allowables set by the Railroad Commission have been so aroused by the drainage from the illegally producing offset leases that they in turn opened their own wells to match illicit production and thus prevent further damage. On January 30 and 31 the Resident Commissioner of the Railroad Commission filed 17 applications for injunctions in the District Court at Austin to prevent overproduction in that particular survey.

Six inspectors from the Dallas office of the Federal Collector of Internal Revenue began early in February an inquiry in East Texas refineries, which now number about 50, of conditions with respect to non-payment of the federal one-cent gasoline tax. This investigation will be of great assistance to the state tax collectors, with whom the federal inspectors will cooperate. The State Tax Commission did not have the means to discover and to prosecute all the cases of non-payment of taxes, four-cent state tax and one-cent federal tax, with the result that tax evasion gasoline was underselling the regular channel motor fuel on uneven terms. The federal investigation is thus expected to have an indirect stabilizing influence on the whole marketing situation in the Mid-Continent area.

The Ferguson administration introduced a new bill in the Texas legislature proposing radical changes in the governing bodies of proration enforcement, substituting for the Texas Railroad Commission a "Natural Resources Commission" to be appointed by the governor. The proposed commission is to consist of three members, serving six years each at a salary of $6,000 per year, for the support of which a tax of ¼-cent per barrel on all crude oil produced is to be collected. Members of the present Railroad Commission are currently receiving $2,000 per year, and the commission is supported by a 1/10-cent per barrel levy on crude oil production. Allegedly the purpose of the new commission is to relieve the Railroad Commission, which it is claimed is

Total U. S. imports and exports and gasoline imports and exports in relation to true exports exceeding true imports.



overburdened by other affairs. A legislative investigation of proration and of the Railroad Commission is now under way, which has for its primary purpose the setting of the stage and creating demand for the new appointive commission. It is not thought probable, however, that the Texas Senate will agree to turn over the oil business to a commission appointed by the governor, the administration's majority in the legislature not being sufficient to pass such a radical measure.

Oklahoma

THE OIL proration investigation by a special committee of the Oklahoma Senate, now in session for one month, uncovered many irregularities in proration enforcement in the Oklahoma City field, but failed so far to secure definitely incriminating evidence against public officials. Sensational information was given by two stenographers of the firm of Parker and Walker, Insurance Company whose real business was handling of illegally produced oil, and of obtaining "protection" for such production. It was testified that "protection" was bought by this firm from the militia officers serving in the Oklahoma City field, including Colonel Cicero I. Murray in charge of military enforcement; it was charged that the firm attempted unsuccessfully to handle about 20,000,000 bbl. of crude oil in Houston, and that it paid to Oklahoma Tax Commission $32,000 in back gross production tax in December, 1932, without showing the source of crude oil, but admittedly paid on crude oil illegally produced from the R. A. MacArthur's wells in the City field. Colonel Cicero I. Murray claimed perjury, asked investigation of the testimony and denied all allegations. Substantially the same information, however, was secured subsequently on February 3 by means of a concealed dictograph during a secret conference held by Raymond C. Walker, of the pseudo-insurance company, with Mark Kleeden and Robert Galbreath, Jr., all involved in the alleged illegal oil syndicate, on the testimony to be given before the Senate Oil Investigating Committee. The dictograph was placed in the conference room at the Black Hotel in Oklahoma City by Herbert K. Hyde, United States Attorney, who is conducting a separate federal investigation into the illegal oil production, planning prosecution on two counts:—avoidance of the federal pipeline excise tax; and failure to report runs to royalty owners and the mailing of checks to these owners where the true amount of production has not been stated, such offense coming under federal mail fraud laws. Members of the State Corporation Commission were accused of planning to accept bribes, and the Secretary of the Commission, E. Hicks, Jr., was apparently forced to resign. The Senate Oil Investigating Committee encountered considerable difficulties in summoning the key witnesses, most of whom appeared to be in Canada.

On February 7 the State Supreme Court handed down a decision in the case of Russell Petroleum Company holding that the state militia cannot by itself enforce proration laws and that the governor cannot levy a tax, or assessment, for maintenance of the militia in the oil fields. As interpreted by lawyers the decision means that the state militia can shut down only those properties which have been adjudged operated in violation of Corporation Commission orders; that the state militia cannot levy a tax; and that it cannot trespass on private properties, or leases, for investigation without special permits. The result of the latest decision will be in all probability a new and thorough proration bill which will cover all phases of proration enforcement, providing for collection of a special tax for maintenance of a state umpire, allowing the employees of the umpire's office to examine and check over all properties in the City field and also imposing severe penalties for failure, or refusal, by producing and pipeline companies to submit daily reports on production and on runs.

Increased nominations by the pipeline companies have been responsible for considerably greater allowance in the Oklahoma City Field, which has been increased from 74,333 bbl. per day in January, 1933, to 93,465 bbl. per day during the first half of February, and to 120,469 bbl. per day during the second half of the past month.

Drilling Speeds

ONE OF the most striking recent advances in the engineering branch of the oil industry has been the great acceleration in drilling of deep wells by rotary tools to speeds believed unattainable but few years ago. This progress has been most notable particularly because such fast completion of deep oil wells has not been an exception but a uniform rule during 1932 in East Texas, in Conroe and in Oklahoma City fields.

The fastest rate of completion of oil wells has been unquestionably achieved in the East Texas field where drilling contractors uniformly average 15 days for moving in, rigging up, drilling, running and cementing surface and oil strings of casing, completion, tearing down and moving to next location. With the total depth of oil wells reaching 3,700 ft. (1,130 meters) the daily average overall footage is thus 246 ft. (75 meters); while excluding all but six days of drilling time the actual daily footage has reached an amazing average of 616 ft. (188 meters). Geological formations in East Texas field are composed of 78 percent of shales, 15 percent of sandstones and 7 percent of limestones.

In the most important oil field development of 1932, the Conroe field, Texas Gulf area, similarly fast drilling has been a uniform practice, rather than an exception. Deeper drilling than in the East Texas field naturally requires heavier rigs and more casing, but still 5,100 ft. (1,550-meter) wells require but 30 days for all operations, from moving in to moving out, while actual drilling time occupies but 16 days. Thus the overall average footage per day is 170 ft. (52 meters), while 318 ft. (97 meters) are averaged each day of actual drilling, a remarkable speed for relatively deep wells. Geological formations in the Conroe field are composed of 90 percent of shales and 10 percent of sandstones.

Very considerable improvement was also noted during the last year in the drilling time in Oklahoma City field where 6,600 ft. (2,010-meter) wells are currently completed in 60 days, including all operations, or an overall average of 110 ft. (34 meters) per day, while the actual drilling average is 171 ft. (52 meters) per day. Three strings of casing are set and cemented in Oklahoma City field. Geological formations in this field are composed of 80 percent of shales, 11 percent of limestones and 9 percent of sandstones.

East Texas

AT THE close of February there were in the Rusk-Gregg field about 9,750 oil wells, an average of one well to 11.3 acres of its proven area. Cumulative recovery from the field reached approximately 248,000,000 bbl. by March 1, an equivalent of 2,250 bbl. per acre of the proven territory. New locations and completions decreased considerably due to unfavorable weather conditions, dropping to about 35 per week each.

Effective January 31 the Railroad Commission issued a new ruling for the East Texas field allowing a spacing of one well to 10 acres instead of the former limit of one well to 20 acres. The old regulation was definitely discriminatory against the major oil companies owning large leases, because small operators were always able to secure special permits to drill wells on subdivided individual tracts of as little as three to five acres. Thus while at this time the East Texas field as a whole averages 11.3 acres per well, the major companies controlling 70 percent of the area

of the field average between 12 to 18 acres per well, while small operators average but 8.5 acres per well. It is anticipated that as a result of the new ruling the major companies will begin an active drilling campaign, as soon as weather conditions improve, to catch up at least partially with smaller operators and thus protect their leases from drainage.

The allowable production of the Van Pool was increased by the Texas Railroad Commission from 42,500 bbl. per day to 52,500 bbl. per day, after the Pure Oil Company sought and obtained a Federal injunction against the Railroad Commission, which wanted the Pure Oil Company to fill its requirements from the East Texas field through purchases.

Conroe—Texas Gulf

ACTIVE development of the Conroe field continued throughout February. By March 1 there were in the pool about 225 producing oil wells and around 130 active operations, of which 70 were actually drilling. New locations continued to exceed 20 each week. Allowable production of the Conroe field was reduced to 116 bbl. per day from each 20-acre proven unit beginning February 4, and was due to be cut further under 100 bbl. per day from each unit at the end of the month. Total allowable of the Conroe field was unchanged at 18,500 bbl. per day, while its actual production was averaging 25,000 bbl. per day due to several wells flowing open under court injunctions.

During February the Conroe field was extended southwest about half a mile by two new producers. The Texas Company No. 1 H. M. Dudley, in C. B. Stewart Survey, and Alpha Oil Company No. 1-A Krohn, in Stephen Bryan Survey, were both completed at about 5,100 ft. and estimated capable of 1,500 bbl. per day through 3/8-inch chokes.

The Sun Oil Company became the third largest producer in the Conroe field through purchase of the properties of A. Plummer and D. B. McDaniel (Gulf Coast Drilling and Producing Company), bringing the company's holdings in the field to about 2,250 acres. The Sun Pipe Line Company will at an early date begin construction of a pipeline from the field to Houston, the fourth pipeline to serve the Conroe field.

Western Kansas

ONE OF THE most important oil field developments in the United States during 1932 has been the continued extension and enlargement of a definite trend of oil pools in central Western Kansas from the McPherson field in T18S-R2W (No. 28 on the WORLD PETROLEUM Kansas map published on page 107 of March, 1932, issue) on the north to the Burrton field in T23S-R4W on the south, and including the Shell-Johnson field (No. 31) in T19S-R3W, the North Voshell field in T20S-R3W, the Voshell field (No. 37) in T20 and 21S-R3W, the South Voshell field in T21S-R3W, the Nickel field in T21S-R3W, the Wall field in T22S-R3W, the Hollow field (No. 39) in T22S-R3W, the Haury-Study field in T23S-R4W and the Burrton field in T23 and 24S-R4W. Only two of these ten pools have been commercially produced prior to 1932, while in that year six fields have been developed into major sources of supply in Kansas. At this time the oil fields have been actively developed in this trend over a length of 32 miles, from Burrton to McPherson, with intermediate gaps gradually being filled in by new discoveries.

At the end of January Reeser, Ross and Lee No. 1 Wall in section 4-T22S-R3W, half way between Nickel and Hollow fields, was completed for 2,500 bbl. per day from Hunton limestone with a total depth of 3,507 ft. This formation developed production only during the past year in Kansas, is of Siluro-Devonian age, and is found directly under the Misner "unconformity" sand. Hunton limestone has shown so far unexpectedly good results in South Voshell, Nickel, Wall and Hollow pools in which four fields some 25 Hunton limestone wells have been recently completed, their actual initial production ranging up to 3,000 bbl. per day, and their combined potential probably exceeding 35,000 bbl. per day.

Lucien—Central Oklahoma

DEVELOPMENTS in the new Lucien field, as first indicated in preceding issues of WORLD PETROLEUM, continued disappointing. Lucien Consolidated Oil Company's No. 1 Jerome in section 8-T20N-R2W drilled to 5,306 ft., but encountered salt water which rose 3,500 ft. in the hole, thus necessitating plugging up to 5,200 ft., where the well flowed about 1,000 bbl. per day. Even more disappointing was the performance of the Stanolind Oil and Amerada Oil Companies' No. 1 Kolb in section 33-T20N-R2W, which though about 30 ft. higher structurally than the discovery well, Lucien Consolidated No. 1 Wolf, was drilled to 5,118 ft. and shot with 10 quarts of nitroglycerine, but still did not do better than 650 bbl. per day initially.

Two very important locations have

World Oil Production—Official Figures for 1933

All figures furnished direct to WORLD PETROLEUM by Governments, except where otherwise specified

(Figures in U. S. Barrels—Conversion ratio 7 bbl. = 1 ton)

Country	Total 1931	Total 1932	Daily Average 1932	January 1933	Daily Average 1933
United States	850,275,000	782,665,000	2,138,429	60,770,000[4]	1,960,322
Russia	156,342,900	149,719,500	409,070	10,382,400	334,916
Venezuela	120,069,462	118,635,671	324,141	8,750,000[1]	282,258
Roumania	46,333,945	50,491,205	137,954	4,500,000[1]	145,161
Persia[2]	40,253,486	45,122,455	123,285	3,563,112	114,936
Mexico	33,038,853	32,802,285	89,624	2,889,663	93,215
Dutch East Indies	32,818,346	39,584,027	108,153	3,000,000[1]	96,774
Colombia	18,237,190	16,384,956	44,768	1,005,353	32,431
Argentina	11,709,759	13,166,900	35,975	1,138,500[1]	36,129
Peru	10,102,116	9,899,266	26,026	900,000[1]	29,032
Trinidad	9,743,763	10,023,780	27,387	815,439	26,304
British India	7,830,101	8,436,864	23,051	700,000[1]	22,580
Poland	4,397,760	3,905,230	10,670	338,100	10,906
Sarawak	3,338,472	2,274,043	6,213	158,900[1]	5,126
Japan and Taiwan[3]	1,884,285	2,340,000	6,393	195,000	6,290
Egypt	1,845,938	1,742,370	4,760	134,620[1]	4,342
Ecuador	1,750,633	1,573,837	4,300	133,912	4,384
Canada	1,583,339	1,054,373	2,880	82,778[1]	2,597
Germany[3]	1,778,602	1,824,019	4,983	130,000[1]	4,193
Iraq	1,200,000	1,200,000	3,278	100,000	3,226
France[1]	512,862	552,000	1,508	46,000	1,484
Others[1]	338,700	432,000	1,180	36,000	1,193
Total	1,255,385,512	1,293,829,801	3,534,028	99,769,777	3,217,709

[1] Estimate. [2] Anglo-Persian Oil Co. figures revised; fuel oil returned to the ground has been deducted. [3] Including Thuringia. Sakhalin (Russian) included with Russia. Sakhalin (Japanese) included with Japan. [4] A.P.I. estimate.

been made in the Lucien field during February, Stanolind Oil and Continental Oil Companies' No. 1 Boley in section 16-T20N-R2W, and Sinclair-Prairie Oil and Gas Company's first test in the field in section 15-T20N-R2W, both wells being to the east of the three present producers and hence possibly located better structurally. Drilling of these two wells will be carefully watched as they will to a very large degree determine future possibilities of the Lucien area, and more particularly will settle the question of drilling or not drilling on the many leases in the area which expire within a few months.

BASIL B. ZAVOICO

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RUSSIA

Official Figures of Soviet Oil Operations*

1933	Crude Production (Bbl.)	Daily Average (Bbl.)	Run to Stills (Bbl.)	Drilling (Feet)
January	10,382,400	334,917	9,510,900	157,486
Total 1932	149,725,500	409,086	142,110,082	2,436,318
Total 1931	156,904,390	429,887	133,669,200	2,331,310
Quota 1932	181,800,000	525,400	162,000,000	3,000,000
Quota 1931	192,500,000	527,400	173,250,000	3,000,000
Revised quota 1933	170,800,000	467,670	155,000,000	3,315,000

* Crude oil conversion ratio: seven bbl.—one ton.

Russia Purchases Oil in U. S.

DRASTIC measures have been considered necessary by the Soviet authorities to meet the situation created by a decrease of approximately 70 percent in oil exports to the United Kingdom between 1931 and 1932. The importance of this falling off in exports is due to the favorable prices obtained in Great Britain for refined products. While it is true that Soviet total exports have increased during the past year, the losses in exports to England which consisted of refined products have been replaced by contracts for crude which will bring in far less money than motor fuel exports to England.

Steps taken recently indicate that the Soviet authorities plan to retain their hold on the British market by improving the quality of motor fuel sold in that country. For this purpose they have purchased two cargoes of Mid-continent casinghead gasoline in the United States to blend with Grozni motor fuel in England. Some 3,000,000 gal. have been purchased to date at a price said to be between 4¼ and 4½ cents per gallon f.o.b. Other contracts are pending for shipments to England and Europe where casinghead gasoline will be blended with Grozni motor fuel to form a marketable product.

Late advices state that another cargo has been purchased by the Soviets from Union Oil of California at 4 cents a gallon.

NO IMPROVEMENT has been reported in crude production in the Soviet Union for the month of January, first month of the first year of the Second Five Year Plan. Crude production totalled 10,382,400 bbl. for all Soviet fields, 525,800 bbl. below the total for December 1932 and 2,677,500 bbl. below the figure of 13,059,900 bbl. for January 1932. The total for the month of January 1931 was 12,072,900 bbl.

Attention is being called to the fact that the Soviet oil industry is laboring under involuntary proration owing to lack of equipment, lack of organization, lack of supplies and perhaps owing to exhaustion of readily available resources as a result of waste. It has been emphasized that Soviet Russia is becoming less of a threat to the world oil markets because of declining crude production, coupled with anticipated difficulty in supplying the demands of the domestic market in oil products.

Crude production of Soviet Russia has been on the down grade since the end of the second quarter of 1932 while internal consumption and exports have been increasing.

As a result of lack of transport facilities it has been necessary to ration supplies of illuminating oil and fuel oil. Recently Soyusnefteexport has had to withdraw from quoting on gasoline owing to shortage of supplies available for shipment. It has been admitted from official sources that on several occasions foreign vessels have been detained in Soviet ports awaiting petroleum products for delivery upon contracts. These vessels have been running high bills for demurrage and it has been reported that over $54,000,000 was paid for demurrage incurred by vessels in the early part of February.

A large part of the difficulties that confront the Soviet oil industry may, however, be attributed to failures of auxiliary industries. The labor department is said to be short of skilled and unskilled hands and lack of housing and difficulty of obtaining food has caused a tremendous turn-over of labor. Industries that have been called on to furnish drilling and refining equipment have fallen far behind plans with resulting adverse effect on the oil industry. Transportation difficulties have already been mentioned: where adequate supplies of petroleum are available it has frequently been impossible to distribute them. On the other hand no exhaustion of the Soviet oil resources has been reported or even noticed. The falling off of production and other operations of the Soviet oil industry is in no way a retreat. It may be considered a momentary rest before the decisive advance is resumed.

It should be borne in mind that the same resources in men, equipment and oil that were available in 1928 are still capable and are still at the disposal of the Soviet state. Using these resources Russia completed the First Five Year Plan, if not in two and a half, at least in four years. With the additions and improvements to operating equipment a great deal may be accomplished toward the achievement of the Second Five Year Plan. Production has been trebled since 1913, and an extensive refining industry with an excellent cracking division has been built up.

The Communist party issued through S T O (Council for Labor and Defence) the decree of September 1932 to provide the oil industry with all necessary supplies and the Executive Committee of the Communist Party have only recently decreed that an improvement in quality and quantity of equipment must be accomplished.

While the quality of equipment built by Russian domestic plants cannot be improved over night by orders and decrees, yet the progress in this work indicates that eventually sufficient improvement in quality may result in making domestic equipment entirely suitable for the oil industry.

Events of the Month

GROZNI. A huge installation for the absorption of gasoline from natural gas is being completed at Grozni. This will be the largest American type installation ever erected in Soviet Russia. The new plant will extract all volatiles against 60 percent extraction at present. The plant has been erected at a cost of 4,000,000 Rbl. and is expected to come into operation shortly.

Sverdlovsk. Vostockneft is erecting a pipe still refinery at Chussoff Village Field in the Urals for a capacity of 560 bbl. of crude per day. The plant will be of domestic construction and has been designed to yield 155 bbl. of gasoline and kerosene, 150 bbl. of lubeoil distillate and 280 bbl. of asphalt per day. Equipment for this plant is being manufactured at the Lower Sergievsk Metallurgical Works of the Urals at a cost of 120,000 Rbl. and is to be ready May 1, 1933.

The blast furnace and metallurgical works at Upper Isetsk in the Urals have received the first shipment of oil from the Chussoff Village fields. The oil is of high quality, high gravity and of satisfactory viscosity and pour point and does not require preheating before use in the furnaces. Chussoff crude oil has also been shipped to other industrial places of the Urals where it has been used as fuel oil. The Chussoff village oil fields will have shortly an electrical power plant in order to electrify all field operations.

Ufa. A new well at Sterlitamak (Ishimbayevsk oil field) has been brought in flowing over 200 bbl. of crude during the first 20 minutes after which the well was capped owing to lack of storage facilities.

Archangel. New oil discoveries were made in the Uktha district. Near the river Yorega an area of over 50 square kilometers was explored for oil and preliminary estimates of the geologists who have examined the area have placed the deposits at 3,500,000,000 bbl. of crude with their usual liberality. The oil horizons are situated at the comparatively shallow depth of about 1,350 ft.

Aktiubinsk. The first link of the pipeline to connect the Caspian Sea oil fields of Emba from Guryeff with the newly formed industrial centers of Orsk and Kurgan has been completed between Guryeff and Makat at a distance of 120 kilometers. The line is to carry crude oil and consists of a 12 in. pipe.

Baku. Large oil deposits have been discovered under the bottom of the Caspian Sea near Baku. These discoveries were made recently by a group of geologists who have applied electrical methods of exploration together with the newest geophysical research. The areas explored by the group of geologists are the Prikurinsk valley and the shore line of the Apsheron peninsula on the Caspian Sea. Commercial exploitation of these locations is reported to be very difficult owing to the inaccessibility of the oil horizons which is due to the unusual geological structure and formation. Reclamation of these locations from the sea would prove difficult owing to the distance from the shore line. Wildcat tests have been made under water and test rigs have been erected.

Crude production in the new oil field of Kala is making steady progress. Several new wells have been brought in recently from various strata which have yielded crude of high quality. An oil well brought in some two months ago continues to produce about 4,000 bbl. of crude per day. Similar operations are being carried on in the field of Lokbatan where a new well brought in from a depth of about 1,800 ft. is flowing over 10,000 bbl. of crude per day. Seven oil locations have been discovered in this area and three more are expected shortly.

Tashkent. Two new oil locations have been discovered in the Neftdag fields of Turcomanneft. Both have given evidence of commercial production and have been turned over for exploitation. The oil field of Neftdag will produce about 700,000 bbl. of crude in 1933, of which only about 10 percent is expected from the newly discovered locations.

Tuapse. The cracking plant at Tuapse yielded 986,000 bbl. of cracked gasoline during the year 1932. The working cycle of this cracking plant has been extended to 95 days against the former cycle of 27 days as provided by the plan.

Leningrad. A geological expedition sent by the Leningrad Petroleum Institute has discovered oil at Tadzikstan in the district of Sank Mil Khatchior which is about 50 kilometers from Stalinbad. Commercial drilling will start soon.

Enterprises Which Will Come Under Operation During the First Quarter of 1933.

The Shundsensk water supply system of Grozni with a capacity of 100,000,000 gals.
Refinery at Krasnodar for a capacity of 6,000,000 bbl. of crude per annum.
Second carbon black installation at Maikop: capacity 1,000 tons of carbon black per annum.
Electrical power plant expansion Baku up to 85,000 Kw.
Electrical power plant at Grozni: installation of new boilers for 1,500 square meters of heating surface.
Natural gas gasoline absorption plant at Baku.

J. Wegrin

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Brazil Abandons Alcohol Mixture

After the Federal Ministry of Agriculture has been given a new organization (for the fifth time within two years) the Commission of Technical and Economical Studies on Motor Spirit was dissolved, because although the problem of producing a suitable mixture for the use of passenger cars has been considered satisfactorily solved, the problem of distribution to the consumer meets unsurpassable difficulties. Statistics made up at the end of the commission's activity show that the maximum of production of suitable motor spirit is approximately 10,000 gal. per day: new factories cannot be erected because of lack of capital. Only two plants, one in Pernambuco, the other in S. Paulo, produce alcohol to provide for some of the motor trucks in the immediate vicinity. The expenses as estimated by the commission are stated to be about $375,000. The decree which was to enforce the use of motor alcohol throughout the country consequently has been annulled.

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Conferences between the international oil group and the Roumanian producers have been resumed on February 20 under the chairmanship of J. B. Aug. Kessler, Royal Dutch-Shell. The conference, which is being held at the Dorchester Hotel, London, is devoted to a review of the facts that have developed under the working of the agreement which went into effect on the first of the year. In the light of these facts efforts are being made to achieve more efficient operation of the present agreement.

Among others attending the conference are: J. A. Mowinckel and Peter Hurll, Standard of New Jersey; R. W. Sellers, Socony-Vacuum; H. B. Heath, Anglo-Persian; Major Talbot, Gulf Refining; Richard Rollins, Atlantic Refining; H. A. Hassan, Sinclair; and Charles M. Claeys, The Texas Corporation. The Roumanians are represented by: Constantin Osiceanu, Steaua Romana; Michel Constantinescu, Credit Minier; M. Bonafous, Steaua Francaise; J. Marinescu, Concordia; T. S. Masterson, Unirea; and G. I. Moriatti, Petro Bucharesti.

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The Canary Islands, hitherto an open market for petroleum products will be considerably restricted by the extension of Article 18 of the Spanish Oil Monopoly Law, as announced recently. Article 18 as applied at present to the Canary Islands prohibits the installation of new storage plants or the extension of existing plants. If the entire Article 18 is applied the market will be closed to United States oil companies.

MEXICO

Drilling

EXPLORATION of Mexican oil reserves continues, especially near the United States border, reports the Ministry of National Economy. Of 22 wells recently brought in, seven are in the northern border states of Nuevo Leon, Tamaulipas and Coahuila; eight are along the Tamesi and Panuco rivers in Tamaulipas and Vera Cruz states; five in northern Vera Cruz state, and two in the Isthmus of Tehuantepec fields, Vera Cruz state. Department declares that wells brought in in northeastern Mexico prove that the rich oil lands which skirt the western coast of the Gulf of Mexico extend to the American border. According to the department, a new well sunk near Ciudad Mier, Tamualipas state, is yielding 60,000 cu. mtrs. (one cu. mtr. is 35.31 cu. ft.) of natural gas daily, while the daily gas yield of another near Ciudad Carmargo is 23,000 cu. mtrs.

Two wells with an initial daily production of 1,232 bbl. from 2,274 ft. and 257 bbl. from 2,694 ft. have been brought in by the Mexican Eagle (Royal Dutch Shell) on the Isthmus of Tehuantepec, Vera Cruz, according to an announcement by the Ministry of National Economy. The oil is said to be of high quality.

Concession to drill several wells for natural gas near Ciudad Mier, Tamaulipas state, near the American border, has been granted the Mexican firm of Plaza and Devine by the Ministry of Industry, Commerce and Labor. If the enterprise encounters gas in sufficient quantities it proposes to supply several large towns in Tamaulipas, Nuevo Leon and Coahuila states, and later to export the commodity to communities in southern Texas.

What appears to be a highly promising oil deposit in a new zone has been encountered near Mendez station, Vera Cruz state, on the railway between Tampico and San Luis Potosi City, by Compañia de Petroleo "La Imperial" which is drilling four wells in the area: Sabalo one, two, three, and four. It is reported that the three former wells each have a daily potential production of 10,000 bbl., while a daily output of 20,000 bbl. is expected of the latter.

Authorization to drill a well in the federal oil reserves on the left bank of the Uzpanapa River, Minatitlan, Vera Cruz, has been granted the administrative control of National Petroleum.

Drilling concessions have been granted to nine unnamed operators by the petroleum department of the Ministry of National Economy according to a late report from Mexico City. The concessions cover territory in the valley in which Mexico City and other large towns are located. Work has been started on some of the locations and hope is expressed that a new oil zone will be uncovered with the possibility that sufficient natural gas may be obtained to heat and illuminate Mexico City and neighboring towns. The petroleum department has taken precautions to prevent the wells drilled on these concessions from being used merely for stock selling propositions.

Construction

PETROLEUM department of Ministry of National Economy has authorized the Texaco Oil Company to establish storage warehouses and service stations in Monterrey, Nuevo Leon state, and Torreon, Coahuila state, and California Standard Oil Co. to build a storage warehouse for its products at Santa Ana, Sonora state, on the main line of the Southern Pacific Railway of Mexico. Department has also given Mexican Eagle Oil Co. (Royal Dutch Shell) permission to establish subdistribution and storage stations in various towns in the Mexican provinces.

Ground is being cleared for the right of way of a 35-kilometer pipeline which the Mexican Eagle Oil Co. will build from its El Plan zone, Vera Cruz state, where it has several producing wells, to its short line railway at Nachital, as a means of eliminating the slow and expensive process of barging oil from the fields to Tonala, the central distribution center for the region.

Labor

A THREATENED strike by Mexico City office workers of the Huasteca Petroleum Company has been averted as a result of conferences between representatives of the workers and company officials under the direction of the Federal Board of Conciliation and Arbitration. The clerks threatened to strike in protest against the dismissal of the general secretary of their union and the refusal of the company to make collective labor contracts with them. The company agreed to respect individual labor contracts and to enter into collective work pacts with its office workers.

Two employees of the Vacuum Oil Company of Mexico are under arrest charged with defrauding the company to the extent of 5,281 pesos (about $1,753, American) by stealing goods from the enterprise's warehouses. According to the company's complaint to the police, the alleged theft was consummated by falsifying records of the removal of goods from the warehouse.

Mexican Debt

A SUGGESTION has been made that the Mexican debt to Spain be, perhaps, completely liquidated by shipment of petroleum products to Spain. The credit of 70,000,000 peseta was established in consideration of the fact that Mexico would have several naval craft constructed in Spanish dockyards. Liquidating the debt by this means might succeed in establishing a permanent foothold for Mexican oil in the Spanish market according to the Chamber of Commerce which submitted the proposal to the Confederation of Mexican Chambers of Commerce.

DOUGLAS GRAHAME

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Shell-Mex House

OUR FRONT cover picture this month is a view of the recently opened Shell-Mex House from Embankment Gardens. "Solid, severe and simple . . ." the building was begun in January 1931, designed by Messrs. Joseph, and opened January 25 of this year. It will house the Shell-Mex and B. P. Ltd. Companies, in one of the most modern and striking business buildings in London.

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Soviets Purchase U. S. Gasoline

A CARGO of casinghead gasoline has been purchased by the Soviet oil industry for shipment from New Orleans in MV. GLITTRE and to be used in England and Europe for blending purposes to increase the quality of Grozni crude sold in those countries. It is said that this is the first of several cargoes to be purchased by the Russians in the United States. A second cargo has been purchased from the Union Oil Company of California at four cents per gallon.

SHIPPING

TWO IMPORTANT contracts and transfers of ownership have taken place since these notes were last written. The Dutch single deck twin screw motor tanker PENDRECHT of 1,589 tons gross carrying about 2,100 tons dw. on 16 ft. 11 in. draft built in Haarlem in 1916 and owned by the Van Ommeren Shipping Company has been sold to Trinidad Leaseholds. She is propelled by two Deutz Diesels of 900 hp. total. Having sold this ship the Van Ommeren Company has placed an order with a Rotterdam shipyard for an 800-ton tanker to be propelled by a 400 horsepower 4-cycle Diesel. This transfer indicates that the contract which it was suggested some little time ago would be placed with British shipyards for a vessel for the Trinidad Company will not now be placed and that the company will use a second-hand ship of coastwise type which, as a matter of fact, will be excellent for their purpose. It was at one time rumored that the new ship would be a Diesel-electric unit although it was difficult to see the reason for propulsion of this sort in an offshore coastwise tanker. The PENDRECHT has been employed in the European coastwise trade and presumably will require certain modifications before being transferred to tropical duty.

The new ship which is being built in Rotterdam is to be completed in a short time and together with an all-welded Rhine motor tanker under construction at the P. Smit yard at Rotterdam represents practically the whole of tanker construction going on in Holland at the present time. Welding is now being regarded very favorably for tanker work and thanks to the activities of such classification societies as the British Corporation, is rapidly emerging from the realms of theory into the region of practical construction. In connection with welded hulls the vessel recently laid down at the Swan Hunter shipyard for Canadian owners is attracting attention. This is a non self-propelling barge and the owners are Dominion Tankers Ltd., Toronto. The dimensions of the hull are 179 ft. by 34 ft. by 15 ft. and this is one of the largest all-welded hulls of barge type yet completed. Its construction is being watched with a great deal of interest by all oil tanker men who are not regarding it merely as a barge but who are visualizing the possibility of application of this type of construction in a much larger way.

An Anglo-Saxon Tanker

THROUGH the courtesy of Mr. C. Zulver, I was recently able to visit one of his new twin screw tankers at Thames Haven where the tanker was berthed at the end of a transatlantic voyage of exceptional severity from Curacao. The clean appearance of the ship was particularly noteworthy and it is to be remarked that after 15 months' practically continuous running this ship which is a 10,000 tonner can come into port and be ready for moving off again within 24 hours without any need for overhaul or touching the main engine in any way. This particular ship is interesting as representing one of the last of the big groups of tankers ordered by the principal tanker companies in their last, perhaps somewhat, over-ambitious construction programmes. There is no doubt, however, that those in charge of the operation of an oil tanker company's fleet prefer, as far as possible, to deal with their own ships rather than with chartered ships. It would not be correct to say that the chartered ships do not maintain the same standard of efficiency but it must be recalled that owing to the diversity of engine types it is impossible to obtain the same uniformity of operation when a large group of tankers is controlled by one operating company.

Tanker Pools

DETAILS of the progress of the Norwegian tanker pool scheme have been recently issued by the Chairman of the Pool, Dagfinn Paust, and he has placed on record his opinion of the situation as it exists at present in a recent issue of the Norwegian JOURNAL OF COMMERCE. The new organization, he points out, started with about 60 percent of the tonnage concerned (clean motor tankers employed in the open market), but a further five vessels of 54,000 tons dw. have since been entered, so that the proportion of tonnage has increased to two-thirds, and the prospects of further owners joining are of the best. Mr. Paust is convinced that everyone will join in when the advantages of cooperation are seen. In his opinion this is the only way of securing a return on the large sums of money invested in tankers employed in the open market. When asked whether it was the intention to extend the bureau to apply to dirty tankers and tank steamers, Mr. Paust said he thought it was very likely, although not yet. Mr. Paust further suggested that competition in the "free" oil trade nowadays was mainly between Norwegian vessels. The chief reason was that these were quite modern vessels and could operate more cheaply than the foreign vessels. The first object of the new organization was to limit this competition so that freights might rise to a level at which foreign vessels would again find it possible to compete. As there had been a rather better supply of orders recently, the prospects of a moderate rise in freights were good, provided owners held together.

Mr. Paust further suggested that there would be no opposition to the scheme on the part of charterers; in fact the

British Tanker Company's (Anglo-Persian) fleet at Queen's Dock, Swansea.

Courtesy Anglo-Persian Oil Company

cooperation which has since been forthcoming from several charterers confirms this view.

Charter Market

WITH REGARD to the charter market generally there has been slightly more activity of late and several enquiries have taken place both for clean and dirty oil boats while business for American loading may be considered active and there has been slightly more activity in Black Sea loading. The time charter market is, however, practically devoid of any good enquiry for long term fixtures. Most of those which can be recorded are for one or two voyages at the most. Tanker men generally are inclined to the view that there can be little, if any, improvement until a great deal of existing and inefficient tonnage is ruthlessly eliminated. It will be interesting in the extreme to see how the working of the new Tanker Pool systems in Scandinavia and America affects the situation generally.

A. C. HARDY

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FINANCE

New York: February

JUST AS OUR February issue was closing for press, the security markets were called upon to withstand the double shock of reduction in the U. S. Steel preferred dividend payment to 50 cents for the quarter instead of $1.75 and the even more unexpected action of the Jersey Standard directors in omitting the usual 25-cent extra payment. The entire market sagged perceptibly, and the Jersey stock broke quite sharply (for such a stable issue) as is apparent from this month's tabulation of prices. About the middle of February another jolt was given to financial confidence by the eight day moratorium on bank deposits announced for the state of Michigan to avert a serious banking crisis in Detroit. This development brought another selling movement in securities which in a few days carried the stock price averages below the resistance level which had remained inviolate since the upturn of last fall.

Meanwhile the prospects for spring business gains continue uncertain and the country's primary need for governmental economy and a really balanced budget goes unsatisfied. The country's financial and business leaders are coming out strongly against currency tinkering by Washington, and it is to be hoped that their warnings of the eventual ruin that would follow such action will prove effective in offsetting political pressure from less well informed quarters. To predict the general trend of economic developments for this year as a whole would be an impossible undertaking at this time, but there is no question but that a great deal depends upon the attitude and achievements of the incoming Federal administration.

CONSIDERING the further price weakness in crude oil and refined products, the oil shares stood their ground in the market very creditably up to the time of closing this month's table. There are 13 plus signs and 13 minuses and 5 stocks stood unchanged for the period,—a rather inconclusive showing on the whole, especially since with the exception of Standard of New Jersey the changes were hardly more than nominal. This is at least partly due to the fact that present quotations are very low in comparison with normal levels for these stocks since prices last year did not advance in response to improved earnings as they might have done if general economic and market conditions had not been so unfavorable during the greater part of the year. The industry will soon be entering its season of expanding gasoline consumption and must then be able to stimulate advancing prices for its products if earnings for 1933 are to measure up to last year, which was not itself particularly profitable.

UNION OIL COMPANY of California has reported 1932 net earnings, after charges, of $3,211,081, equal to 73 cents a share, compared with $3,054,913, or 70 cents a share, in 1931. There were apparently no unrealized inventory losses, in 1932, but in 1931 this item, which amounted to $7,210,062, was charged against surplus instead of earnings. The improvement in 1932 results would be much more striking if the 1931 inventory adjustment, equal to $1.64 a share, had been deducted from net income.

Financial position continued strong during 1932, and current assets including $16,462,268 in cash and marketable securities totalled $51,497,419 at the year-end, being about nine times current liabilities of $5,757,542.

IN CONTRAST to the recent unfavorable dividend action of Ohio Oil in omitting payments and of Standard Oil (New Jersey) in cutting payments in half, Seaboard Oil Company (Delaware) has declared an extra of 10 cents a share in addition to the regular 10-cent quarterly dividend payable March 15 to stock of record March 1. These payments, however, were predicated upon 1932 earnings and the extra should not be considered to reflect present earnings prospects which are beclouded by the sharp fall in prices in recent months.

STANDARD OIL COMPANY of Kansas, which early last year sold its refining and transportation business and assets to Standard Oil (Indiana), reported a small profit of $61,971 for the nine months ended December 31, 1932. The old company was operating at a loss at the time of its dissolution due to inadequate margins in the refining branch of the industry and declining demand. The new company's initial operations in the crude oil branch have apparently been successful, although net in this initial period is being helped by the accounting policy adopted whereby intangible development costs are capitalized and amortized over the life of the properties instead of being charged against current earnings in their entirety as is done by most of the major companies which operate extensively in this branch.

Financial position is strong, with cash and U. S. Government bonds at the year-end amounting to over $4,100,000, compared with total current liabilities of $214,000. An offer was made to accept stock of the company during February for purchase at $17 a share to the extent of the available surplus.

FURTHER evidence of the improved earnings position of the industry during 1932 will be furnished by the statement of Consolidated Oil Corporation which is expected to show a small profit after all charges. The merger of Sinclair and the

two Prairie companies to form Consolidated became effective February 1, 1932, and a combined report for 1931 was not issued. The combined net loss of the three constituent companies in that year amounted to about $40,000,000, so that it is obvious that a substantial earnings improvement took place. In the five months ended June 30, 1932, Consolidated's net was equal to 5 cents a share on the common stock. It is understood that financial position has changed very little since February 1, 1932, when current assets were $135,000,000, including $56,000,000 in cash and marketable securities, and current liabilities were about $16,000,000. Funded debt and preferred stock outstanding were reduced somewhat during the year. No inventory write-offs were necessary at the close of the year since substantial reductions in inventory values were made when the consolidated company was formed.

PETROLEUM CORPORATION of America, which is in essence an investment holding company in the oil industry, reported liquidating value at the close of 1932 equal to $7.23 per share of outstanding common stock, compared with liquidating value of $6.51 a share at the close of 1931. The gain, of course, reflects a slightly higher price level for the securities held, which in turn reflected the better conditions in the industry during the year. Had it not been for the unfavorable trend of the fourth quarter, the gain might have been much more striking.

The company's largest holding is in Consolidated Oil and amounts to 1,446,000 shares which were received in exchange for its substantial blocks of Prairie Oil and Gas, Prairie Pipe Line and Sinclair. Other items in the portfolio at the close of last year were 10,500 shares of Imperial Oil, 80,200 shares of Ohio Oil, 57,100 shares of Standard Oil of California, 7,300 shares of Standard Oil (Indiana), 320,000 shares of Tide Water Associated, 21,196 shares of Union Oil of California, and 15,000 shares of United Gas Corporation. Securities owned at the close of 1932 had an aggregate market value of $14,552,000.

THE UNEXPECTED omission of the 25-cent extra by Standard Oil (New Jersey), as noted in these columns last month, carries no clear implication of impending reduction in the $2 rate of Humble Oil and Refining, its important mid-continent subsidiary. At the recent annual meeting of the latter company the presiding official stated that results for the past year had not as yet been definitely determined, but that it could be said that earnings were in excess of dividend requirements. About six months ago it was estimated that about $5 a share might be earned in 1932, but the fourth quarter slump in oil prices very likely brought the final figure substantially below that level. During the year Humble drilled approximately 600 wells, of which only 18 were dry holes establishing a remarkable record for efficient drilling. Daily average net crude oil production was 70,415 bbl. and in addition nearly two barrels a day were purchased for every barrel produced. Despite the many measures of economy adopted, the management did everything possible to spread employment and actually ended the year with a few more on the payroll than at the close of the previous year.

London Stock Exchange Prices

1932 High	1932 Low	Last Year's Div. % per Ann.	Share	January 12–February 10 First	High	Low	Last	Change
5/8	1/2	3 1/2	Anglo-Ecuadorian	5/8	5/8	1/2	17/32	−3/32
1 19/32	1 17/32	10	Anglo-Egyptian "B"	1 9/16	1 9/16	1 13/32	1 17/32	−1/32
2	1 3/4	5	Anglo-Persian	1 13/16	1 15/16	1 3/4	1 7/8	+1/16
1 1/32	29/32	25	Apex Trinidad (5s.)	1 1/32	1 1/32	29/32†	1 3/16†	−3/32
17/32	3/16	....	Attock	17/32	17/32	3/16	3/16	−3/32
19/32	1/2	5	Brit. Borneo (6s.)	19/32	19/32	1/2	9/16	−1/32
3/16	3/16	....	Brit. Burmah (8s.)	3/16	3/16	3/16	3/16	.....
7/32	5/32	....	Brit. Controlled ($5)	7/32	7/32	5/32	3/16	−1/32
1/2	13/32	....	Brit. Controlled Pfd. ($5)	13/32	1/2	13/31	3/16	−1/32
3 9/32	2 29/32	17 1/2	Burmah	3 1/16	3 1/16	2 29/32	2 31/32	−3/32
1 1/32	9/32	....	Canadian Eagle (No par)	5/16	5/16	9/32	9/32	−1/32
1/8	3/32	....	Kern River (10s.)	1/8	1/8	3/32	3/32	−1/32
1 27/32	1 9/16	12 1/2	Lobitos	1 13/16	1 13/16	1 9/16	1 3/8	−3/16
4 1/8	4 1/16	15*	London & Thames Haven	4 1/8	4 1/8	4 1/16	4 3/32	−1/32
1 3/32	1 1/32	....	Mexican Eagle ($4 Mex.)	3/8	3/8	1 1/32	1 1/32	−1/32
9/16	7/16	....	Phoenix	9/16	9/16	7/16	1/2	−1/16
19 7/8	17 1/8	6	Royal Dutch (fl. 100)	19 1/8	19 1/8	17 7/8	17 15/16	−1 7/16
2 15/32	2 5/32	7 1/2*	Shell Transport	2 15/32	2 13/32	2 5/32	2 1/4	−7/32
8 1/2	6	....	Shell Union (No par)	8 1/4	8 1/4	6	6 3/4	−1 1/2
7/16	3/8	4	Steaua Romana	5/16	7/16	3/8	13/32	−1/32
2 3/8	2 5/32	12 1/2	Trinidad Leasehold	2 19/32	2 19/32	2 5/32	2 11/32	−1/4
1/4	3/16	....	Untd. Brit. of Trinidad (6s. 8d.)	1/4	1/4	3/16	7/32	−1/32
1 5/8	1 15/32	10	Venezuelan Oil Concessions	1 19/32	1 19/32	1 15/32	1 1/2	−3/32

Nominal value of shares £1 unless otherwise stated by bracketed figures.
* Denotes Tax-free dividend. † Denotes "Ex-dividend" price.

AT THE SAME time that Standard Oil (New Jersey) omitted its usual extra, thus in effect cutting disbursements in half, its sister company, Standard Oil of California, declared the regular quarterly dividend of 50 cents a share, payable March 15 to stock of record February 15. Thus the equality of dividend rates, which might have aided consummation of a merger on a share for share basis, has been destroyed and the California stockholders will find another reason for desiring more favorable treatment.

C. C. BAILEY

London: February

CIRCUMSTANCES have been against the oil share market during recent weeks, the two chief adverse factors being the weakness of crude and gasoline prices in America, and activity in South African gold mining shares in London. The virtual collapse of the United States market for crude was responsible at one time for a widespread expectation in the London Stock Exchange of a cut in the petrol market here. Less is being heard at the moment of this aspect of the outlook, but the realization that the position has been seriously weakened by the fall in American crude has dried up the demand for shares. Activity in the mining market has affected oils in two ways. It has restricted business to such an extent that the market is very much narrower than it was a few weeks ago. At the same time, a number of small holders and operators in oils have transferred their attention to the mining market, and there has been some difficulty in absorbing their realizations of oil shares. The market was, therefore, in a vulnerable state when Wall Street oil prices turned weak following the passing of the Standard of New Jersey extra quarterly dividend. In view of this combination of adverse circumstances, quotations for oil shares have shown excellent resistance, especially since the possibility of a reduction in British petrol prices must be considered to have been at least partially discounted. There is not much in view at the moment to suggest a revival of interest, but current conditions of relative stagnation, combined with a sound technical condition, leave the market in a position from which a rapid rise would result immediately from renewed demand.

ANGLO-PERSIANS, the only leading share to show an advance during the past month, were marked up on the news that negotiations with the Persian Government for a renewal of the D'Arcy Concession

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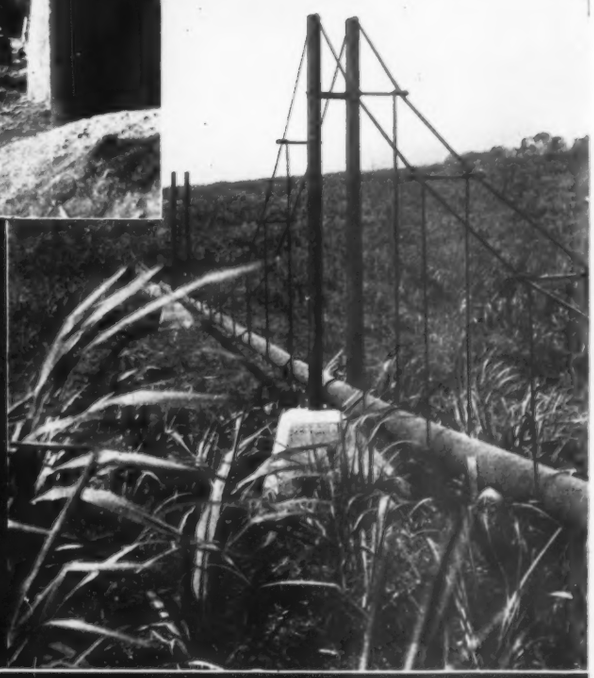
Sections of the twenty mile ten inch Victaulic oil pipe line supplied by Stewarts and Lloyds Ltd to Trinidad Leaseholds Ltd



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SOLE SALES AGENTS IN TRINIDAD FOR THE PRODUCTS OF THE VICTAULIC CO. LTD.

are to be resumed, and that cancellation of the concession is to be suspended meanwhile. Dealers in oil shares were expecting some such denouement; otherwise Anglo-Persian issues would have fallen away much more than they have done during the past three months.

The accompanying table shows prices of Anglo-Persian stocks immediately before and after the announcement of the concession annulment, with quotations at the beginning of the year, and at the current level.

Anglo-Persian Shares

	Nov. 28, 1932	Dec. 1, 1932	Jan. 3, 1933	Feb. 9, 1933
Ordinary	2 9/32	1 25/32	2	1 7/8
8 percent 1st Pref.	1 15/32	1 7/32	1 5/16	1 13/32
9 percent 2nd Pref.	1 13/32	1 7/32	1 9/32	1 11/32
5 percent Debenture	107½	104½	103½	105

Conditions in the oil share market generally account for the decline in the ordinary since the beginning of the year. As normal investment issues, the preference stocks are not greatly affected by this influence. Absence of complete recovery to November prices, despite the proposed renewal of negotiations, reflects the knowledge that the situation still calls for careful handling, and that a new agreement will not necessarily leave the company with the profit earning capacity it has hitherto enjoyed.

MARKET rumors crediting British Controlled Oilfields with the intention of paying a dividend on its preference shares have been less insistent since the decline in American prices. As the company was formed in 1918, and has not yet paid a dividend on either class of capital, the directors are doubtless anxious to commence making a return. This stage was brought nearer by the capital reorganization in 1930, and by the advance in British petrol prices in September last, a very large part of the total production being sold under contract based on the price of petrol in the United Kingdom. At the close of 1931, however, a debit balance of £21,898 was carried forward on the company's revenue account, and 1932 sales only benefited by 3½ months of higher selling prices. The position, therefore, calls for caution, particularly as the company's profits would be instantly reduced by lower petrol prices here. Although, at the moment, such a reduction may not be in immediate prospect, the British Controlled directorate must necessarily take the heavy fall of oil prices in America into account when considering possibilities of making a first distribution on the company's preference capital.

THAT the rise in British petrol prices last September meant the difference between losses and profits for some companies is made clear in the annual report of Petroleum Storage and Finance Corporation. Reporting a big deficit for the year to October 31, 1932, the directors state that selling prices up to September 14 involved a loss on every gallon sold, but add that since the price increase the Corporation has operated at a profit. Half of the capital of this undertaking, held by Ebano Oil Company, formed part of the foreign assets of Pan American transferred to Standard Oil of New Jersey last year. Accounts for 1931–32 show a net loss of £85,354, compared with a deficit of £53,209 for the preceding twelve months, and there is now an accumulated deficit of £138,490. The directors state that the supply contract with Ebano provided invaluable support, and a note in the balance sheet shows that allowances under supply agreements amounting to $706,515 have been received by the Corporation and are repayable out of future profits. It appears, therefore, that the results would have been some £145,000 (at par) worse if these allowances had not been received, and that the Corporation has mortgaged its future earnings to this extent. The undertaking, however, has given evidence of its capacity to earn large profits under reasonable market conditions, so that the incubus of the repayable allowances, although large, should not prove a crushing burden.

ATTOCK OIL COMPANY continues to encounter difficulties in its programme for deep drilling. In a review of operations since the last annual meeting in June 1932, the directors state that expert advice has again been called in to deal with the problem of drilling through high pressure water zones to explore lower horizons. Rock pressures met with are believed to be as high as, if not higher than, those in any known oilfield. This may necessitate special new equipment and consequent delay in resumption of deep testing. Production for 1932 is reported as 145,681 bbl. against 138,806 bbl. in 1931, and considerable working economies have been effected. Sales of refined products increased, but only at the expense of a withdrawal from stocks. As a result, the company's cash resources have been maintained. An official forecast of last year's financial results indicates a considerable improvement on those for 1931, when a substantial loss was incurred. Revenue earnings should cover expenditure, but are not likely to leave much margin for provision of depreciation of plant. As suggested by the price of around 10s. for the £1 shares, the company is classed as a speculative proposition while its new programme remains in the present stage.

ALEC H. DAY

New York Stock Prices

1933 High	1933 Low	Current Div. $ per Annum	Stock (Par Value $)	Jan. 23 to Feb. 11 Sales (Shares)	First	High	Low	Last	Net Change[1]
17¼	15¼	1.00	Atlantic Refining (25)	23,100	15⅞	16½	15¼	16½	+ ¾
4¼	3⅜	....	Barnsdall (25)	23,000	3⅝	4	3⅜	4	+ ⅛
½	¼	....	Colon Oil (No)	600	⅜	⅜	¼	¼	− ¼
6⅛	5⅛	....	Consol Oil (No)	54,300	5⅛	6⅛	5⅛	6	+ ¾
6¼	5¼	....	Continental Oil (No)	26,700	5¾	6⅛	5¼	6⅛	+ ⅜
2⅞	2⅝	....	Creole Petroleum (No)	6,200	2⅝	2⅞	2⅝	2¾	+ ½
29¼	26	....	Gulf Oil Corp. (25)	5,000	27½	27½	26	27⅜	+ ⅛
45	43¼	2.00	Humble Oil & Ref. (25)	3,600	44¼	45	43¼	44	.....
8¼	6⅞	0.50	Imperial Oil, Ltd. (No)	7,600	7½	7⅜	6⅞	7¼	− ⅜
2	1⅜	....	Indian Refining (10)	700	1⅞	1⅞	1⅜	1½	− ⅜
10⅞	8⅞	1.00	International Petr. (No)	25,300	10⅛	10⅜	8⅞	10⅜	− ⅛
7⅛	5¾	....	Ohio Oil (No)	20,900	6⅜	6¾	5¾	6⅜	.....
12⅜	12	0.80	*Pan Amer. P. & T. 'B' (50)	400	12	12	12	12	− ⅜
6	4¾	....	Phillips Petr. (No)	20,000	5½	5⅞	5¼	5⅞	+ ⅜
3⅞	3⅛	....	Pure Oil (25)	5,900	3½	3½	3⅛	3¼	− ⅛
½	⅜	....	Richfield Oil (No)	1,100	⅜	½	⅜	⅜	− ⅛
21⅝	19¼	†0.81	Royal Dutch N. Y. (13⅓)	5,200	19⅝	20¼	19¼	20⅛	.....
20¼	15	§0.40	Seaboard Oil (No)	16,200	17½	18¼	15	17¼	− ¼
5⅜	4	....	Shell Union (No)	16,700	4⅞	5⅜	4	5¼	+ ¼
3¾	3⅛	....	Skelly Oil (25)	1,900	3½	3½	3¼	3¼	.....
7⅞	6¼	0.40	Socony-Vacuum (25)	123,600	7¼	7⅜	6¼	7¼	+ ⅛
26	23	2.00	Standard Oil of Calif. (No)	71,600	25¼	25⅝	23	24⅜	− ⅜
22⅛	20	1.00	Standard Oil, Ind. (25)	85,400	21⅜	21½	20	21⅛	− ⅛
17⅝	15	....	Standard Oil, Kansas (25)	11,300	16½	17¼	16¼	17	+ ¾
11¼	10½	1.20	Standard Oil, Ky. (10)	5,400	11	11⅛	10⅝	10⅝	− ⅜
31⅜	24¾	1.00	Standard Oil, N. J. (25)	191,400	30¾	30⅞	24¾	26⅞	−3⅞
37	36	‡1.00	Sun Oil (No)	400	36	36	36	36	.....
14⅛	12¼	1.00	Texas Corp. (25)	30,500	13⅜	13¾	12¼	13⅛	+ ⅛
4	3⅛	....	Tide Water Assoc. (No)	31,200	3¼	4	3¼	4	+ ⅝
11⅝	9¾	1.00	Union Oil of Calif. (25)	2,100	10	11	10	10¼	− ½
¼	⅛	....	Venezuelan Petr. (5)	1,700	3/16	¼	3/16	¼	+ ⅛

[1] Since close of last month's table. † Paid for 1931—no regular rate. ‡ Also paid 3% in stock in 1932. * Ex Pan American Foreign. § Plus extras.